

***Making a Commitment
to Quality: Development
of a National Quality
Assurance Program in
Chile 1991–1998***

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The QAP team, which consists of prime contractor Center for Human Services, Joint Commission Resources, Inc., and Johns Hopkins University (including the School of Hygiene and Public Health, The Center for Communication Programs, and the Johns Hopkins Program for International Education in Reproductive Health) provides comprehensive, leading edge technical expertise in the design, management, and implementation of quality assurance programs in developing countries. Center for Human Services, the non-profit affiliate of the University Research Co., LLC, provides technical assistance in quality design, management, process improvement, and monitoring to strengthen health systems management and maternal and child health services delivery in over 30 countries.

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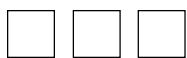
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Acronyms



ARI	Acute respiratory infection
DAP	Primary Health Care Department
EMC	National Program for the Evaluation and Improvement of Quality
ISQua	International Society for Quality Assurance
JUNJI	Government Youth Agency
MOH	Ministry of Health
NGO	Non-governmental organization
PAHO	Pan American Health Organization
PHC	Primary health care
PEFR	Peak expiratory flow rate
PNAC	National Program for Supplementary Feeding
QA	Quality assurance
QAP	Quality Assurance Project
SAP	Information Unit
SEREMI	Regional-Level Health Office
SOME	Patient Fee Collection Office
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

Executive Summary



The Quality Assurance Project (QAP) provided technical assistance to the Chilean Ministry of Health from March 1991 until December 1994.¹ During that time, QAP staff and consultants worked with local health professionals to develop a national quality assurance (QA) program and local QA expertise. The expressed goals of the program were to 1) raise awareness about the importance of quality throughout the health system; 2) develop a structure for the support of quality assurance activities; 3) achieve measurable improvements in quality of care and service delivery; and 4) improve patient satisfaction. To a large extent, the quality assurance effort in Chile was able to achieve these goals. The National Program for the Evaluation and Improvement of Quality (known by its Spanish acronym, EMC) within the Ministry of Health is now well developed, with QA programs operating in nearly all of Chile's 29 decentralized Health Services. EMC does not depend on external financing or technical assistance. This report summarizes the activities of the first four years of the process of institutionalizing quality assurance in the Chilean public health system, during which time the Quality Assurance Project collaborated with the EMC.

Institutionalization Strategy

QAP began work with the Ministry of Health (MOH) of Chile in March 1991, when QAP staff and consultants planned and delivered a quality awareness seminar for senior MOH officials. The recommendations resulting from the seminar led the Ministry to create the National Program for the Evaluation and Improvement of Quality.

Because of the decentralized nature of the Chilean health system and the geographic diversity of its regions, MOH authorities decided from the outset that the program should be developed on a national scale, rather than as a regional pilot project with phased introduction to other regions. A national-level training course on quality improvement was developed and delivered in July 1991 in Punta de Tralca for 100 health professionals from the Health Services and universities from all over the country. At the end of the week-long course, participants were asked to decide how best

¹ This work was carried out with support from the Ministry of Health of Chile and the United States Agency for International Development (USAID) through its Quality Assurance Project under Cooperative Agreement No. DPE-5992-A-00-0050-00, implemented by the Center for Human Services.

to proceed in their regions. Some chose to pursue awareness activities; others opted to start with small quality improvement projects; some organized quality committees; and still others combined these strategies. Different strategies were then pursued in the regions in accordance with particular local needs; together, they comprised the national program.

A second important aspect of the institutionalization strategy was QAP's commitment to develop local expertise as quickly as possible, so that Chilean collaborators would have the knowledge they needed to develop their program and make strategic decisions. This commitment had implications for the training strategy, in which QAP used a modified cascade training approach. International experts trained local health professionals and supported them during their first experiences as trainers. The development of a series of quality assurance training modules by the Chilean team allowed the team to standardize the methodology and adapt the methods to the Chilean context.

A third distinguishing characteristic of the institutionalization process in Chile was the decision by MOH counterparts to incorporate into the EMC program the various key actors in the health sector. Representatives of national and regional universities, the private sector, non-governmental organizations, and the medical associations were invited to participate in training activities and quality commissions. University professionals offered to act as quality assurance trainers. Medical associations lent legitimacy and credibility to the effort. While involving key actors from the larger health sector required additional effort in the beginning, MOH officials believe that broad-based participation has helped to sustain the EMC program and is one of its strengths.

Finally, while the program began in the primary care setting, requests were soon received from hospital personnel who wanted quality assurance training. These institutions were included, increasing the momentum behind the EMC program and creating the possibility for collaboration between the different levels of care.

Achievements of the EMC Program

The Chile program has achieved impressive results in the development of QA structures at the national, regional, and local levels; training and dissemination efforts to develop quality improvement skills and instill a culture of quality throughout the health system; and quality improvement projects and activities.

QA Structures

The Chilean Ministry of Health has sponsored the National Program for the Evaluation and Improvement of Quality since 1991. While the central level team directing the program was originally composed of staff from the Primary Health Care Department, in 1995 a Quality Unit was established within the regular structure of the Ministry of Health. This unit has provided training and support to the nation's 29 Health Services to develop their own quality assurance programs. The unit's role is advisory, and funding and staffing are on a small scale. In keeping with Chile's policy of decentralization of health service delivery, much of the financial support for this unit comes from the Health Services themselves, which since July 1993 have paid for training and technical assistance out of their local budgets.

In April 1997, the unit was renamed the Quality and Regulation Unit within the Division of Personal Health, reflecting the added role it has been given in reinforcing the regulatory role of the MOH with a quality focus. Working with staff from all major programs in the MOH, the Quality and Regulation Unit in 1997–98 led a process to define quality standards, criteria for achievement of the standards, and indicators to measure the achievement of standards in 16 priority health areas. The unit was tasked with coordinating the development of quality standards, criteria and indicators that could be used by the Regions, Health Services, and facilities to assess and monitor their progress in achieving health priorities. The resulting document represented the first time that quality standards were defined at the national level in Chile. The unit is also reviewing existing laws, decrees, and regulations to identify areas in need of further regulation and is organizing committees of experts to collaborate with the MOH to develop norms in specialized areas.

While the central quality unit was the critical element in the development of the EMC program, Chile's quality assurance program now has its strongest institutional base in the Health Services, where quality committees have been formed at the regional, hospital, and health center levels. The quality committees provide a structure for priority setting, assignment of tasks, coordination of training and technical support, and information sharing and dissemination. In addition, quality monitors have been trained by the EMC's central staff in most of the Health Services. These monitors have played a vital role in quality assurance training and coaching at the local level, thus facilitating the decentralization of the EMC program and creating the basis for its continuity.

Quality assurance programs now exist in 26 of the country's 29 Health Services, and 75% of the Health Services have included a Quality Assurance Policy or Plan in their Health Plan. Many of these quality assurance programs are fully operating QA structures, and a number of them have developed their own training and coaching capacity. While such technical autonomy is the goal for all the Health Services, there is still a continued need for technical support, coordination, and dissemination by the central level quality unit.

Training in Quality Assurance

One of the most successful EMC components has been training and the development of local training capacity. Through national, regional, and local training activities, the MOH Quality Unit has been successful in motivating hundreds of health professionals from around the country to start quality assurance programs. By the end of 1995, more than 5,000 health professionals had received basic quality assurance training, and more than 200 Chilean health professionals had been trained as quality monitors by the central level team. By October 1998, 10,600 health workers and 615 quality monitors had been trained. More significant, 38% of the health workers trained received their training through seminars conducted entirely by quality monitors and local quality teams.

QA training in Chile has been standardized through a series of 16 training modules that can be used for training or individual study. The modules, which were developed by the central Quality Unit, address such topics as quality assurance awareness and the meaning of quality; how to carry out a quality improvement project; teamwork; developing a QA structure and

QA plan; quality evaluation and monitoring; supervision; medical audit; basic statistics applied to quality; and improving information to clients. These training materials have been used throughout the country and provide a common frame of reference for trainers, coaches, and health practitioners who are implementing quality assurance activities in their daily work.

In addition to training, “Quality in Health Care Month” is an important mechanism for instilling a culture of quality in the health sector in Chile. The Ministry of Health has sponsored this program each October since 1994 as a means of stimulating quality-related events and activities. The Ministry also convenes a National Quality Assurance Conference annually. The first national conference took place in 1995, was three days long, and featured approximately 50 presentations of quality improvement projects, regional QA plans, and technical discussions of QA issues. The 1998 conference had expanded to five days, including a pre-conference seminar on user satisfaction.

Quality Improvement

By 1994, more than 200 quality improvement projects had been initiated in Chile. Many more quality improvements were carried out as ad hoc efforts without developing a formal project. By 1998, the number of quality improvement projects initiated throughout the country under the aegis of EMC had risen to more than 600. Most of these projects were carried out on a relatively small scale, affecting the population served by a hospital, health center, or cluster of health centers. In only a few cases were regional initiatives attempted, since problems and priorities varied from health center to health center and it was not always practical to work in larger teams. Consequently, the results of the EMC program can be reported only in terms of the populations served and not in terms of their impact on national health statistics.

Individual quality improvement projects achieved measurable gains in quality of care. Results documented in some of the quality improvement projects carried out in Chile during 1991–1995 are shown in Box 1.

The greatest success of this component of the project was that a large number of health professionals, working throughout Chile, committed their energy and abilities to making small and large contributions to

improved quality of care in their hospitals and clinics. As teams gained experience with the methodological approach, the time needed to complete projects decreased and the methodological rigor of the projects improved. The many varied projects carried out in Chile demonstrate that the EMC program was able to create a commitment to concrete quality improvements around the country.

Box 1

**Results from Selected Quality Improvement Projects,
1991–1995**

- Reduction in incidence of discontinuing treatment for tuberculosis from 36.8% to 6.3%.
- Improvement in patient compliance with prescribed lab tests from 66% to 86%.
- Decrease in waiting time for geriatric admission by 10 days and reduction in inappropriate admissions.
- Improvements in quality and reductions in the cost of pharmaceutical services through increases in: verification of medical indication (40% to 93%), patient name (53% to 66%), and name of medicine (53% to 100%); timely administration of medication (67% to 93%); and correct administration of injectables (60% to 93%). Returns of unused medications to the pharmacy resulted in savings of US\$30 per day.
- Reduction in waiting time for children requiring surgery with local anesthesia from three months to 15 days, a 43% increase in the number of procedures carried out.
- Improvement in the quality of care of diabetic patients, resulting in an increase in normal blood sugar levels from 60% to 100%.
- Increased compliance with drug treatment among children with attention deficit disorder, from 57% to 93%.
- Improved education of mothers regarding dental care, resulting in an increase in the proportion of mothers understanding the importance of fluoride from 7% to 93% and a reduction in mothers who thought caries were normal or to be expected from 46% to 7%; mothers reported a decrease in soft drink consumption from 80% to 13% and a reduction in two-year-olds using bottles from 22% to 17%.
- Introduction of new schedules and an intercom system in a specialty clinic, resulting in an increase in the percentage of patients seen in less than 70 minutes from 8% to 45% and a reduction in the proportion of patients who waited more than 140 minutes from 31% to 8%. The length of time patients spent with the doctor also increased, with the percentage of patients who spent between 15 and 30 minutes with the doctor rising from 10% to 40%.
- Increased timely prescription of iron therapy in pregnant women (i.e., within three weeks of detection) from 12% to 87%.

Conclusions

Since its inception in 1991, the Chilean Program for the Evaluation and Improvement of Quality has grown and developed in terms of scope, technical skills, and sustainability. It is now an ongoing MOH program, with strong technical capabilities at the central level and a broad base of support in the decentralized Health Services. The EMC program has been successful in developing a QA structure in Chile, improving quality in specific areas, and developing technical expertise in QA at the national and Health Service levels that enables the program to sustain itself. While the Chilean experience is a dynamic one that is still developing, its activities to date serve as a model for other countries in Latin America and the world. Box 2 highlights achievements of Chile's quality assurance program by 1995 (just after QAP assistance ended) and through September 1998.

Box 2

Achievements of the National Quality Assurance Program

	1995	1998
Health professionals trained	5,254	10,600
Quality monitors trained	256	615
Health Services with quality assurance plans	42%	75%
Quality improvement projects completed or in progress	200	625

QAP staff and their Chilean counterparts believe that the following factors have contributed strongly to the institutionalization of QA in the Chilean health system: 1) the creation of a central-level team with a strong command of QA methods, training approaches, and interpersonal skills; 2) a decentralized implementation strategy, which motivated personnel in the Health Services to develop QA activities in response to local needs, priorities, and resources; 3) development of QA training and reference materials tailored to the Chilean context; 4) the training of quality monitors throughout the country, which facilitated sharing of experience and skills transfer; and 5) collaboration with Chilean professional schools and universities, which both enhanced the technical expertise available to the MOH and led to the inclusion of quality assurance in professional curricula, further promoting institutionalization.

Preface



Historically, Chile has been a leader in health care in Latin America, strongly emphasizing prevention, primary care, and high-quality medical education. From 1991 to 1994, the Quality Assurance Project collaborated with the Chilean Ministry of Health to develop a national program for assessing and improving the quality of health care services—one of the first in Latin America. Through its technical staff and outside consultants, the Quality Assurance Project provided exposure to a range of quality improvement methods that could be applied in Chile. Chilean health professionals at all levels responded with enthusiasm and have since demonstrated a sustained commitment to improving health care quality. Early in the technical assistance effort, a quality assurance methodology appropriate to Chile was developed and codified in a series of training modules. At the same time, efforts were made to develop an organizational structure to support quality initiatives, as a first step toward institutionalizing quality assurance.

Building a quality assurance program is a long-term strategy for improving the quality of health care services, and the Chilean program continues to evolve today. This report, which is presented in two parts, describes the program's development through 1998.

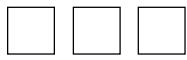
Part One describes the Chilean quality assurance program's goals and the strategies employed to institutionalize quality assurance through the creation of QA structures, training, and dissemination. It also describes the phases of development of the program and draws lessons from the Chilean experience that may serve other countries.

Part Two focuses on the specific quality improvements achieved through the EMC program during its first four years. It includes brief descriptions of selected quality improvement projects, as well as a summary of the quality assurance activities in each Region and Health Service. While it is not feasible to document all program activities in detail, this report characterizes the kinds of specific improvements that can be achieved by a program of this nature, and gives a sense of the breadth and scope of the Chilean EMC program's activities.

Part One

Development of a National Quality Assurance Program

I. Origins of the Chilean Quality Assurance Program



IN December 1989, Chile held its first democratic elections after 17 years of military dictatorship. A civilian government was elected on a platform that included health care improvement. In striving for the fundamental objectives of economic growth and equity, the government of President Patricio Aylwin defined the role of health care as “a) an end in itself, health is a component of the standard of living which should be constantly improved, and b) it must be considered an essential means for achieving economic development.” The government’s social policies were based on promoting equity, social efficiency, social participation, respect for the dignity of individuals, and solidarity with poor and neglected sectors of society, resulting in a collaboration of all for the common good.² One aspect of this movement to strengthen the public health sector was widespread concern on the part of both patients and providers about deficiencies in the quality of health services.³

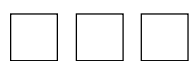
In March 1991, the Ministry of Health (MOH) began a national quality improvement initiative with a quality awareness seminar conducted by the United States Agency for International Development’s Quality Assurance Project (QAP) for senior MOH officials. As a result of the seminar, an initial plan for a two-year technical collaboration effort between the Primary Health Care Department of the MOH and QAP was developed. The plan was funded by USAID/Chile as one component of a larger effort to strengthen primary care in Chile.

² Status of Health and Health Care Services in Chile, Ministry of Health, Santiago, 1993.

³ *La Salud y el Sistema Nacional de Salud en Chile*, Documento de Trabajo No. 1, Colegio Médico de Chile, Santiago, 1997.

The Primary Health Care Department then formed the *Proyecto para la Evaluación y Mejoramiento de la Calidad*, or National Project for the Evaluation and Improvement of Quality, known in Chile by its Spanish acronym, EMC. QAP was asked to provide technical support to the EMC and to the unit responsible for its implementation within the Primary Health Care (PHC) Department. Although EMC began as a primary health care project, as the program developed, secondary and tertiary levels became progressively more involved. As will be discussed below, EMC evolved over time into a national program that now encompasses all levels of care.

II. Background on the Chilean Health System



CHILE is a geographically and climatically diverse country of 14.6 million people. The vast majority (84.9%) of the population resides in urban areas, with 40% concentrated in the Santiago Metropolitan Region alone. While Chile's per capita gross national product of US\$4,753 ranks it as a middle-income country, some 23% of the population lives below the poverty line and 15.8% lives in extreme poverty.⁴ Despite the low income of a significant proportion of the population, health indicators for the country approach those in more developed countries. The infant mortality rate is 11.1 per 1,000 live births, and maternal mortality stands at 2.5 per 10,000 live births.

The public health system, which serves approximately 60% of the population, is highly decentralized. The country is divided into 13 Health Regions which, in turn, are further segmented into 29 Health Services. The Health Services are the key administrative unit in the system and have considerable autonomy in implementing programs and services. The role of the central Ministry of Health in Chile's decentralized health care system is to set technical norms and standards, with program planning and implementation left to the Health Services. The Health Services have direct responsibility for the operation of public hospitals in their areas and provide technical oversight to the primary health care facilities, which are managed by the municipal governments. The public health infrastructure comprises approximately 178 public hospitals, 376 ambulatory clinics, and 1,822 rural medical stations and posts. In total, the national health system

⁴ CASEN Survey, Ministry of Planning, Santiago, 1996.

has 64,800 employees, of which 16,500 work at the primary health care level.

Health care in Chile also is characterized by a well-developed private sector, which is estimated to cover about 34% of the population. There are also a large number of non-profit non-governmental organizations (NGOs), which play a significant role in the health sector.

III. Strategy for Developing a National Quality Assurance Program in Chile



A. QAP Framework for Institutionalizing Quality Assurance

BASED on its experience assisting diverse countries to develop quality assurance programs, the Quality Assurance Project has identified a series of elements that together constitute a comprehensive system for assuring the quality of health services in an organization or within a health system. These elements are presented in Figure 1 as a systems model of quality assurance.

Quality assurance (QA) institutionalization can be defined as the transfer of quality assurance skills and expertise to individuals throughout an organization or health system to enable them to carry out key quality assurance processes on an ongoing basis as part of their routine activities. Institutionalization is fully achieved when expertise, commitment, and resource allocation are sufficient to apply, sustain, and continue to develop quality assurance functions in the country.

In order to achieve the institutionalization of QA functions, organizational structures are needed to plan and direct QA activities at both the policy and operational levels. The specific organizational arrangements that are best suited to carry out QA activities vary from country to country and are determined largely by the organization of the health system and institutional culture of the organization that directs the QA effort. In some countries, a central QA unit has been created to lead and coordinate QA activities throughout the system, while in others, QA functions are integrated into existing organizational units and processes.

As seen in Figure 1, a number of key processes are necessary to achieve the desired outcomes of quality assurance. Developing local capabilities to train health workers in quality assurance approaches and methods is critical. This QA training capability must provide basic skills for front-line service providers as well as advanced skills for quality coaches or monitors. QAP has found that institutionalization is furthered when QA training capabilities are established both within the organization directing quality assurance activities and in institutions providing medical and nursing education in the country.

Figure 1
Systems Model of a Quality Assurance Program

Inputs	Processes	Outcomes
Human resources competent in QA	QA capacity building and training	Improved quality of care
Structures to organize and direct QA processes	Developing and communicating quality standards	Improved client satisfaction
Policies supportive of assuring quality	Designing/redesigning services to respond to client needs	Improved service provider satisfaction
	Monitoring compliance with quality standards	Health care organization committed to quality
	Improving quality through problem solving and process improvement	QA activities sustained
	Documenting and disseminating information on QA activities	

This report discusses the strategies employed in Chile to develop QA structures and processes and the progress made in fully developing QA functions within the health system. The team of MOH staff and QAP consultants who designed the EMC program made a conscious decision to make quality improvement activities the dominant emphasis of the QA program in Chile in its early years, with less initial attention to developing and communicating quality standards and monitoring compliance with standards. This was because quality improvement was felt to best respond to the perceived needs for immediate results in the quality of health care

services, especially at the PHC level. As will be discussed in more depth below, the QA methodology used in training activities and materials in Chile emphasized how to carry out a quality assessment and improvement cycle. In its fourth and current stage, the program focuses on developing and disseminating quality standards as well as criteria and indicators to measure compliance with standards for national, regional, and local health priorities.

B. Design of the EMC Program in Chile

FOLLOWING the initial quality awareness seminar, a small group of QAP consultants (including both national and international specialists) worked with members of the Primary Health Care Department of the MOH to design the national QA program. Based on the political context in which the project was conceived—one of transition to democracy in which health services were a priority—and the perceived need for improving health service quality, they defined the following guiding principles for the implementation of EMC activities:

- The effort must be national in scope.

Senior MOH officials decided that all the Health Services should have the opportunity to participate in motivational and capacity-building activities from the outset, rather than the gradually incorporating areas through pilot projects.

- Participation must be voluntary and respect local autonomy.

In order to respect the autonomy of the decentralized Health Services, it was decided that participation in the EMC program would be voluntary. Thus, the Regions and Health Services would determine the nature and scope of activities. It was anticipated that each decentralized Health Service would develop its own quality assurance plan and organizational structure, appropriate to local needs and realities. The central team would work through the regional and Health Service leadership, and all technical assistance would be carried out with the approval of local authorities, taking into account local roles and responsibilities. The role of technical advisors would be consultative, recognizing that decision-making authority rested solely with the local authorities.

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- The foundation for a successful program is motivated and well-trained health providers at every level who will carry out quality assurance activities over time.

The EMC team decided that the program's first phase would emphasize activities to recruit, train, and motivate health workers at every level of the health system in quality assurance principles and methods. There was also a recognition that improvements in quality must be achieved at all levels of care in order for the quality initiative to be truly effective. Therefore, training activities were open to health professionals from all levels.

- Encourage involvement of a broad array of health sector actors.

Chilean universities, NGOs, and professional associations play an important role in defining and sustaining the technologies and methodologies applied to the health sector. Thus, MOH officials recognized that involving these actors in the quality improvement effort would benefit both the public sector health services and the organizations themselves, as well as further institutionalization goals.

Based on these guiding principles, Ministry of Health officials defined the objectives of the EMC program as follows:

- To raise awareness about the importance of evaluation and improvement of quality among those who manage and deliver health care, and to develop local capacity to apply QA methods in Chile.
- To assign responsibilities for QA activities through the formation of committees at the operational levels (health posts, clinics, hospitals), and to institutionalize a continuous and systematic quality improvement process.
- To achieve measurable improvements in quality through specific projects at the local level.
- To increase the acceptability of health services and satisfaction of those who use the health system in areas where the program is active.

The national-level team, led by Dr. Gilda Gnecco of the Primary Health Care Department, then developed a plan of activities that the EMC program would carry out to achieve these objectives:

1. Organize a national conference with representatives from all of the Health Services and Regions, as well as from universities, NGOs, and the private sector, to introduce QA concepts and methods and to motivate local health authorities to develop their own QA plans and activities. This conference was held in July 1991 in Punta de Tralca.
2. Support training of health care providers in QA skills by working with Regions and Health Services to organize and carry out local QA training courses.
3. Promote and support the development of quality assurance committees at the Region, Health Service, and facility levels to plan and direct local QA activities.
4. Identify and train quality monitors throughout the country to provide technical support for QA training and quality improvement activities at the Region and Health Service levels.

The central-level QA team envisioned its role as that of motivating and training health professionals from the Health Services in quality assurance methods and providing technical assistance as needed to help the Health Services develop QA plans and committees and implement quality improvement projects. The central team also saw the need to lead efforts to share and disseminate information about QA resources and local experiences. At the same time, the central team recognized that it could not provide the needed technical support to quality improvement teams throughout the country and conceived of the role of quality monitors as a means of decentralizing technical support. Quality monitors would be recruited from the Health Services, universities, and NGOs and be given specialized training in QA coaching. They would serve as local QA coaches who would work with individual teams to help them carry out the steps in the problem-solving and quality improvement process.

C. Tailoring the Quality Assurance Methodology to Chile

AT the outset of the EMC program, the Chilean team and their international consultant counterparts examined a variety of state-of-the-art approaches to improving health service quality on the basis of traditional quality assurance, operations research, and total quality management paradigms, in order to determine which approaches were most useful and appropriate in Chile. As noted above, the team decided that the EMC program would emphasize process improvement and the application of quality assessment and improvement cycles, drawing on QAP's six-step approach to problem-solving and process improvement.⁵ They then set about developing a standardized approach to quality improvement that would be the main focus of basic quality assurance skills training.

Beginning in November 1991, the central team began to develop training modules. They worked closely with the international consultant team to develop six basic modules for use in the training program. The Chilean team then continued to refine the modules, adding a number of innovative approaches to the material based on their own training experiences, evaluating what worked, and revising and improving the group exercises and materials many times so that they became as complete and clear as possible. The creation of the modules facilitated the rapid dissemination of basic skills and helped the central training team to consolidate their own training skills.

By the end of the first year of the EMC program, a standardized quality assurance methodology emerged from the process of conducting QA training. What resulted is a straightforward quality improvement process that is applied flexibly by teams throughout Chile. The program offers a very structured way of approaching quality problems, with guidelines, worksheets, and prescribed formats for each step of the process, from defining the problem, to analyzing it, to developing indicators to measure the problem and evaluate the impact of each of its supposed causes. Some teams followed the process meticulously, while others chose an area for

⁵ For a more detailed discussion of the six-step approach, see: Franco, Lynne Miller, et al., *Achieving Quality Through Problem Solving and Process Improvement*, Second Edition, Center for Human Services, Bethesda, MD, 1997.

improvement and worked on it in their own way, relying on skills that they already had, as well as skills learned in QA training.

Some of the most challenging aspects of the quality improvement process for teams in Chile have been problem definition, establishing pre and post measurements to evaluate their work, and simply finding the time in their busy schedules to practice quality assurance. The EMC program has found that the completeness of projects has improved over time and that teams were able to implement them more quickly as they became more experienced.

The EMC training has provided exposure to a variety of quality assurance tools. Overall, process improvement teams in Chile found the fishbone diagram, the flowchart, and the affinity diagram to be the most useful. QAP advisors observed that local teams understood how tools should be used and also felt comfortable using them in experimental ways that served their purposes. For example, the affinity diagram was used as a way of building consensus about norms and procedures. Teams frequently were amazed at how much more quickly they could reach agreement and consensus with this method.

After direct QAP assistance to the EMC program ended, the central team developed an additional ten methodological modules in response to needs they identified in the course of supporting quality assurance activities in the Health Services. The complete set of 16 training modules used in the EMC program is shown in Figure 2.

Figure 2
EMC Training Modules

Module 1: History of the Quality Assurance Program in Chile.

Module 2: In Search of Quality of Care: Presents a conceptual framework that defines quality of care, identifies methods for evaluating and improving quality, and describes the components of a quality assurance program.

Module 3: How to Carry Out a Quality Evaluation and Improvement Cycle: Guides participants through a series of presentations and group exercises to help them develop the skills needed to design and begin specific quality improvement projects. Group exercises include priority setting and problem definition; problem analysis (using flowcharts and fishbone diagrams); definition of standards, criteria, and indicators; and data collection methods and instruments.

Module 4: Organizational Change: Discusses organizational change in quality assurance, analyzing the many factors that come into play as an organization seeks to develop a culture that promotes quality.

Module 5: Teamwork, Leadership, and Effective Meetings: Includes some theoretical perspectives about how working groups form and mature, as well as guidelines for group facilitation, effective communication, developing an agenda, and running an effective meeting.

Module 6: QA Planning/Basic: Provides step-by-step guidelines for developing the phases and activities of a Quality Plan. **QA Planning/Advanced:** Intended for senior managers and quality monitors; provides a conceptual framework for defining quality policies, vision, mission, purpose, objectives, and strategies.

Module 7: Training Quality Monitors: Provides the theory and group exercises to train quality monitors. Enables quality monitors to train health teams and other monitors.

Module 8: Evaluation of Health Care Services: Defines the evaluation process, its instruments and applications, and introduces the process of developing standards and criteria.

Module 9: Basic Statistics Applied to Quality Assurance Programs: Used in monitoring seminars.

Module 10: Information to Users: A Mechanism to Increase Accessibility: Provides an overview of the importance of information to clients in QA programs, from the information given by the organization to the informed compliance of patients in specific situations.

Module 11: Monitoring of a QA Program: Presents the different steps of the monitoring process and group exercises related to the construction and selection of indicators.

Module 12: Medical Audit: An Instrument for Evaluation: Provides specific concepts and a model for auditing medical records and other instruments.

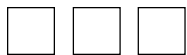
Module 13: User Satisfaction: Presents a conceptual framework, examples of instruments, and a model for continuous monitoring of user satisfaction at different levels of the health system.

Module 14: Communication: An Important Strategy in QA Programs: Under review.

Module 15: Supervision: Presents a conceptual framework and provides basic skills to construct a supervision checklist.

Module 16: Evaluating Quality Assurance Projects: Designed for quality monitors who are assessing health teams. Describes the different steps in evaluating a project.

IV. Stages of Development of the EMC Program



SINCE July 1991, when the first QA activity took place, through 1998, the Chilean National Quality Assurance Program has experienced four stages of development, each with its own characteristics and achievements. These stages may be defined as follows:

- Stage I: Team Building, Skills Development, and Project Development (March 1991– September 1993)
- Stage II: Decentralization and Institutionalization of QA in the Health Services (September 1993 – March 1995)
- Stage III: Institutionalization of a Quality Unit in the Ministry of Health (March 1995 – March 1997)
- Stage IV: Quality and Regulation (March 1997 – present)

QAP provided technical assistance to the EMC during the first and second stages. During the first year of the EMC program, the technical assistance effort emphasized quality assurance training, organizing quality committees, and QA planning. During that period, the central quality assurance team, with support from international experts, was able to initiate activities throughout Chile and develop a national profile for the program in a very short time. As the program developed, the role of QAP's advisors became more limited, shifting from involvement in training design and delivery and project development to advising the Chilean team on strategic planning. Though the impetus for the EMC was an externally funded project to improve primary health care services, quality assurance has become institutionalized in Chile's health system, relying only on local technical and financial resources.

Stage I. Team Building, Skills Development, and Project Development (March 1991 – September 1993)

The first major event in the EMC program was the national QA awareness and basic skills training seminar held in Punta del Tralca in July 1991 for representatives from all of the country's Health Services, universities, and professional associations. The meeting sought to explain the objectives and decentralized implementation strategy of the program and motivate

leaders from the Health Services to initiate quality assurance activities in their own areas by forming quality committees, hosting training seminars, starting quality improvement projects, and developing QA plans.

The team leader of the EMC program, Dr. Gilda Gnecco, asked participants to list the most pressing quality problems at the primary health care level in the public health system in Chile. Participants cited long waiting times, physical and structural factors that limited access to services, limited treatment capabilities at the primary level (resulting in delayed care or inappropriate use of higher cost specialists), and patient dissatisfaction with the interpersonal treatment they received. Workshop participants also expressed frustration with inadequacies in their work environment, including outdated technology and physical infrastructure, inadequate coordination, low morale, and lack of incentives. Participants were encouraged to develop quality improvement projects to address these perceived problems. Ten quality improvement projects were initiated as a direct result of the seminar.

During the first two years of the EMC program, the central team focused on developing quality assurance skills and capacity in the Health Services. In the first year, training in basic quality assurance concepts was provided to 674 health professionals, covering more than half of the country's Health Services. By September 1993, 2,800 health professionals had received basic QA training, 80% of whom were primary care providers and 20% secondary and tertiary care providers.

In the EMC program's second year, the central team sought to build on this capacity by stimulating the development of small, targeted projects aimed at achieving quality gains through the use of quality assurance problem-solving methods. This step represented a transition from learning and skills development to more active project development. Forty-four quality improvement projects were initiated by 1993, and many more ad hoc quality improvements took place without formal projects.

The second year of the EMC program also saw a number of changes that collectively signaled the growing commitment to quality assurance in the Ministry of Health. In 1993, the MOH began assigning its own non-project funds to the program. The coverage of EMC activities (basic training, training of quality monitors, and development of specific projects) was

extended to 23 of the then 27 Health Services, with the progressive involvement of more senior and mid-level managers.

The central-level team also developed greater technical depth in quality assurance methodology and increasingly standardized its methodological tools, such as training modules and worksheets. This standardization facilitated the diffusion throughout the health system of common terminology and methodological approaches and made it easier for local teams to systematically define and analyze quality problems and develop criteria and process indicators to measure quality and monitor programs.

Quality monitors at the Health Service level began to assume a larger role in advising and supporting quality improvement teams, reducing dependence on the central-level team. Ninety-one quality monitors had been recruited by the end of this stage. At the same time, the central team became less dependent on technical assistance from the international consultants and gained greater confidence in its abilities to refine and further develop a quality assurance approach specific to the reality of Chile. The role of international technical assistance shifted from training and skills development to a more advisory role, helping the EMC central team to conduct a series of strategic planning exercises to analyze the first year's experience and develop a work plan for 1993.

Stage II. Decentralization and Institutionalization of QA in the Health Services (September 1993 – March 1995)

The second stage of the program began in September 1993, when outside funding for the EMC program ended and the program was faced with the challenge of supporting itself. The MOH decided to fund the salaries of four central staff members, their travel expenditures, and materials for quality assurance training and coaching. All other costs were to be borne by the Health Services, which would pay for materials, training costs, and travel expenses of participants.

As the program moved toward independence from outside technical assistance, it also sought to mirror that same process in its decentralized programs. That is, the central team sought to transfer responsibility and authority to the quality monitors and committees in the Health Services with the ultimate goal of having the services able to meet their own needs

for QA planning, training, and coaching. By the end of this stage, more than 5,000 health professionals had received quality assurance training, and some 250 quality monitors had been trained. More than 200 quality improvement projects had been completed or were in progress. Twenty-six of Chile's 29 Health Services had quality assurance programs, and four had established quality units within the Health Service. Some 90 quality committees had been formed at health center, hospital, Health Service, and regional levels.

During this stage, the central team finalized the quality assurance training modules and organized the first national conference on quality assurance to present and discuss experiences under the EMC program.

Stage III: Institutionalization of a Quality Unit in the Ministry of Health (March 1995 – March 1997)

Beginning in 1995, following the termination of direct QAP assistance in December 1994, the EMC program moved into a third stage. This stage was marked by continued decentralization and the permanent incorporation of quality assurance functions in the structure of the Ministry of Health through creation of a Quality and Norms Unit in the Health Programs Division. The new unit was assigned the following objectives:

- Continue to develop and decentralize QA activities, coordinating and maintaining permanent communication with the Regions, Health Services, hospitals, and clinics involved in the EMC program
- Support QA activities in the Health Services in an advisory role, emphasizing the development of quality policies and plans
- Respond to training requests financed by the Health Services
- Develop and sustain national information-sharing and dissemination channels, including the National Month of Quality and the annual National Quality Conference

During this period, the central quality unit was also asked to review all existing norms and regulatory documents of the MOH to identify areas where norms and regulations were outdated or non-existent. The unit also began organizing groups of experts (from both within and outside the

MOH) to work on norms, protocols, and manuals in areas where they were lacking.

By this time, all training activities were being implemented locally and directed by local quality monitors. Staffing of the central unit was reduced to one full-time professional (the Coordinator) in 1996.

Stage IV: Quality and Regulation (March 1997 – present)

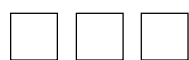
In March 1997, in the context of the health sector's reform process, the quality unit was renamed the Quality and Regulation Unit, based in the Division of Personal Health. The unit was given the expanded responsibility of helping to develop the regulatory role of the Ministry of Health with a quality focus. The unit defined the regulation function of the MOH as "performed through laws, decrees, regulations, instructions, norms, protocols and other instruments that permit the design, evaluation, control and monitoring of technical and administrative processes in the health system in order to guarantee quality standards in health service delivery." The unit has since undertaken two major activities in this direction.

First, working with other professionals in charge of major health programs and units in the MOH, the unit coordinated the preparation of a comprehensive listing of quality standards, criteria for their achievement, and indicators for their measurement for 16 national health priorities.⁶ The document, which represented the first time that quality standards had been defined at the national level, was designed to enable the Regions, Health Services, and facilities to assess and monitor their progress in achieving standards for the 16 health priorities.

The second activity was to review and redefine, if necessary, the regulatory role of the MOH. This task has involved cataloguing and standardizing the presentation of norms and other regulatory documents; identifying areas in need of further regulation and organizing committees of experts to work on those areas; disseminating regulations and norms to the appropriate levels; and promoting the development of instruments for the supervision and monitoring of compliance with standards at the national level. Work on this activity continues.

⁶ *Criterios, Estándares de Calidad e Indicadores de las Prioridades de Salud País*, División de Salud de las Personas, Ministerio de Salud, Santiago, 1998.

V. Training and Capacity Building



AS NOTED above, one of EMC's pressing objectives was to develop assessment and quality improvement skills in health providers throughout the country. In order to facilitate the program's independence and self-reliance, international technical assistance was directed primarily at developing local QA training capacity during the first year.

The capacity-building effort in Chile was conceived of as broader than simply providing training courses. All training activities have stressed the importance of making a commitment to quality improvement through participation in quality committees and specific quality improvement projects. Thus, from the outset, participants are made aware of the importance of applying what they have learned and the expectation that the development of QA skills relies on "learning by doing." Follow-up technical support is provided to trainees by local or regional quality monitors.

A. Basic Quality Assurance Training

THE first training activity was held in July 1991, when a national seminar was convened for primary care directors of all the Health Services and for members of the university community, NGOs, and the central Ministry of Health. The seminar was conducted by MOH staff with the participation of international and national consultants, and was attended by 110 people. The seminar's principal achievement was to motivate these leaders to introduce quality improvement activities into their own Health Services by forming quality committees, hosting training seminars, starting small quality improvement projects, and sharing information with the PHC team. One region replicated the seminar in its entirety for approximately 60 participants.

After this initial seminar, the central team took on increasing responsibility for delivering the course and modifying its contents to make it more appropriate to the Chilean context. As noted above, the central QA team in the MOH began to develop standardized training modules for the basic quality assurance course. The role of the international consultants increasingly became one of collegial support and feedback rather than one of teaching and direction. As a result, the EMC central team assumed leadership early on and developed its own technical capabilities.

Typically, the basic EMC training course takes place over a three-day period. It includes approximately 24 hours of instruction divided among presentations, group work, and plenary sessions in which the small groups present their results. The objectives of the basic course are summarized in Figure 3.

Figure 3
Objectives of the Basic EMC QA Training Course

- To motivate participants and foster commitment to quality assurance. This should result in development of small-scale projects, further involvement as EMC monitors, and involvement in QA committees at all levels.
- To convey the basic concepts of quality of care and evaluation and improvement of quality.
- To help participants understand and apply specific methods for identifying, defining, and prioritizing quality problems.
- To help participants understand and apply methods for problem analysis, including flowcharts and fishbone diagrams.
- To introduce methods used to define criteria and indicators for evaluating quality and to determine appropriate data sources, and data collection methods and instruments.
- To instruct participants on how to develop small-scale quality improvement initiatives in their hospitals and health centers.

In 1995, the basic course was expanded to four days to add sessions on team-work, leadership, and how to build up a quality assurance program. Throughout most of the country, training was carried out at the Health Service level, bringing together a variety of health professionals from local hospitals and health centers. In more densely populated areas such as Santiago and Concepción, however, a series of seminars was held in which professional associations co-sponsored the training, bringing together doctors, nurses, midwives, dentists, nutritionists, and social workers to learn about quality assurance.

By October 1998, 10,600 health workers from primary, secondary, and tertiary health care settings had participated in a basic EMC training course. More significantly from the standpoint of institutionalization and

decentralization, 38% of these workers received their training from local quality monitors and teams.

B. Training of Quality Monitors

IN ADDITION to providing basic instruction, the EMC program is providing advanced training to quality monitors who serve as a local source of support for quality improvement teams. The quality monitors assist with training health professionals, coach quality improvement teams, and lead quality improvement activities in their areas. Most QA monitors are employed by the MOH regional offices or by the Health Services; however, some are university faculty or members of NGOs who have an interest in promoting and implementing quality improvement in Chile. The monitors have committed to spending time promoting quality assessment and improvement in their work. Many EMC monitors are also members of quality committees at the regional, Health Service, hospital, or health center levels. The assistance of these monitors has permitted the small central team to extend EMC activities nationally at a rapid pace.

The first training course for EMC quality monitors was held in March 1992. The objectives of the quality monitors training course are shown in Figure 4. In addition to skills learned in the training course, monitors

Figure 4

Objectives of the EMC Quality Monitors Training Course

- To enable participants to carry out motivation and training activities in their Health Services. Participants receive a package of materials that they can use for training and other quality assurance presentations.
- To enable monitors to review proposed quality improvement projects and recommend modifications. Monitors learn to give constructive feedback to teams so that QA methodologies are used effectively to improve quality.
- To enable monitors to help teams work together better by understanding how teams develop, learning how to run meetings, and learning how to manage conflict.
- To provide monitors with basic skills in designing data collection instruments so that they can assist teams in instrument design when necessary.

develop skills and build confidence through work on specific quality improvement projects and by participating in introductory seminars as group monitors. At present, more than 615 quality monitors have received training, participated in training seminars, and contributed to quality improvement projects.

The technical leadership abilities of quality monitors are also developed through monthly meetings of a study group for EMC monitors that has been organized both in the Metropolitan Region and in Concepción (Region VIII). Quality monitors meet to discuss various readings in quality assurance and to share their experiences in training and monitoring. QA specialists visiting Chile have also been asked to make technical presentations to the monitors.

C. Collaboration with Universities

ANOTHER major EMC training activity was the basic quality assurance training that was held for faculty of the Medical School and the School of Public Health of the University of Chile and for the Catholic University Nursing School. This training resulted in the introduction of quality assurance methods into the universities' course work. Further, several faculty members have made contributions to the quality improvement effort as EMC monitors. In 1995, a similar training course was held for faculty of the School of Nurse-Midwives of the University of Valparaíso in Region V.

VI. Organization of QA Structures



QUALITY committees are the most important component of the EMC program structure. By October 1998, 98 quality committees had been formed at the regional, Health Service, and facility levels, in both hospitals and primary care clinics. In this way, the quality assurance organizational structure corresponds to the decentralized structure of Chile's health system.

Formation of a quality committee is completely voluntary and is based on local needs and possibilities. Committees are responsible for coordinating and planning quality improvement activities, for assigning responsibilities and resources to the effort, for organizing and supporting training and motivational activities, for facilitating the development of specific quality improvement projects, and for dissemination of study results and activities. Committee membership may include top-level political appointees, Health Service officials, representatives from local universities, representatives from related governmental services (schools or day-care programs), and representatives from NGOs. Membership in quality committees formed as of 1994 is reported in section II of Part Two of this report, which summarizes activities in the Health Services.

VII. Dissemination Activities



THE EMC dissemination strategy seeks to recognize the many Chilean health professionals who contribute to the quality improvement effort, motivate others to get involved and stay involved, keep in contact with participants from EMC courses so that they can stay abreast of EMC activities, and share technical experiences in evaluating and improving quality.

A. Quality in Health Care Month

SINCE 1994, the MOH has designated October as “Quality in Health Care” month. This designation is intended to stimulate health care professionals throughout the country to come together to share experiences and promote quality through special events.

B. Annual National Quality Assurance Conference

THE main mechanism for sharing experiences in the EMC program is the National Quality Assurance Conference, which has been sponsored annually by the Ministry of Health since 1995. The 1995 conference was a three-day event that included approximately 50 presentations of quality improvement projects, regional quality plans, and technical discussion of QA issues. The 1998 conference lasted five days, with a pre-conference seminar on user satisfaction. The average attendance at the conferences is 250, with participants drawn from the Health Services, universities, and the private sector.

C. Resource Center and Study Groups

THE QA Resource Center is housed at the Quality Unit in the MOH and makes QA resources available to quality monitors and teams around the country. These materials have been used by a series of study groups in which health professionals come together to read and discuss information about QA methods and experiences. To date, study groups have been formed in the Metropolitan Region and in Concepción-Arauco.

In the past two years, the unit's reference center has expanded to include regulatory documents (including norms, protocols, manuals, laws, and decrees) classified by program. Twelve volumes containing regulatory documents related to the 16 national and regional health priorities were distributed by the unit to all Health Service Directors, program chiefs, hospital directors, and municipalities, as well as to the universities and NGOs.

D. Participation in International Conferences and Study Tours

THE EMC Program has also shared its experiences internationally, through frequent participation in the Congress of the International Society for Quality Assurance (ISQua). At the 1993 ISQua meeting in the Netherlands, the EMC team was awarded the Italian Prize for the best paper from Latin America.

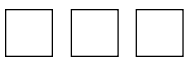
For more than 20 years, Chile has hosted a three-month seminar on maternal and child health for approximately 50 health professionals from across Latin America. In 1995, the seminar included a module on evaluating and improving quality that was delivered by the EMC Coordinator, Dr. Gnecco. This was the first time that quality was addressed at this annual seminar. The EMC central team has also hosted study tours for visitors from other countries in the regions such as Peru and Costa Rica.

E. Publications

E^{MC NOTICIAS - CHILE} was a bi-monthly newsletter published by the central EMC team during the early stages of the program to keep health professionals throughout the country informed about EMC training activities, development of quality improvement projects, formation of quality committees, and the activities of the central team. The newsletter ceased publication in 1995 because the circulation became too large and funds were not available to continue its regular publication. Instead, the EMC central team now contributes QA information to the routine bulletins published by most of the Regions. Bulletins have proven to be a more sustainable vehicle for dissemination of information about EMC activities.

In November 1998, a book written by EMC Coordinator Dr. Gnecco titled *Quality Is Ours: A Country Reality* was published. The book describes the experience of the EMC program since 1991 and its underlying conceptual and methodological framework.

VIII. Lessons from the Chile Experience



SINCE its inception in 1991, the Program for the Evaluation and Improvement of Quality in Chile has developed into an ongoing program of the Ministry of Health with widely developed QA capabilities at the national and Health Service levels. The experiences of the EMC program to date show that health professionals are willing to learn QA methods and make a commitment to improve quality. Also, the leadership in the Ministry of Health and in the Health Services has shown a willingness to commit the time and resources needed to improve quality of care.

This report has described the strategies applied to build QA capacity and activities in Chile, with the view that such information may be helpful to other countries in their efforts to institutionalize quality assurance systems. While needs vary, the authors believe it is useful to examine the factors that facilitated the rapid diffusion of the QA approach and methods in Chile.

First, a strong national technical team was developed. In Chile, the central team developed, early on, a solid command of QA methods and training approaches. These, combined with strong interpersonal skills, enabled the team to earn the respect of the quality monitors and of the Health Service directors and Regional directors who became involved in the program. Development of a skilled core team also helped to minimize dependence on external technical assistance and avoided making the program externally driven. Program leaders in the MOH assumed control of the methodology development process, incorporating their own insights and becoming the true “owners” of the methodology.

In Chile’s decentralized health system, the QA program also needed to be decentralized. The central-level team was able to strike an effective balance between promoting local control of quality assurance programs

and providing support and guidance when needed. As a result, the Health Services are gradually becoming self-sufficient, looking to the central team as a vehicle for dissemination and occasional support. In Chile, the decision to emphasize a large number of small-scale projects rather than a few large-scale QA interventions proved to be an effective way to develop skills and expand the program throughout the decentralized system. While it is tempting to try to maximize impact by carrying out large-scale activities that can be proven to have impact on national health statistics, in Chile it was more realistic and feasible to implement quality assurance on a smaller scale, at the health facility level, where team members could come together to tackle a problem that was close to their work. While a large number of small-scale efforts do not replace large-scale national initiatives, the former produce a substantial cumulative effect and foster broad participation in the quality assurance program.

Top-level support was critical for success. The strong support of the Ministry of Health leadership was very important in Chile. During the first three years of the EMC program, the Minister of Health changed three times. In each case, the new Minister reviewed the program, recognized its value, and decided to continue support. The fact that the central team was able to present the program effectively and point to a broad base of activities helped to gain this support. Also, there was a fundamental recognition that quality of care was an important part of the government's health policy. This created a climate that encouraged individuals within the system to commit their time, energy, and talents to EMC activities.

Some lessons may also be drawn from the Chile experience about which implementation strategies were particularly effective in building QA capacity and fostering the application of QA methods and skills:

- **An effective training program is an early priority.** Early in the program, there was a great demand for basic QA training. In order to meet the demand, it was necessary to have a standard training package and a cadre of quality monitors who could help the central team to deliver training. It is important to anticipate and prepare for a high demand for quality assurance training early in the program.

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- **Examples, including model projects and structured formats, help teams to do their work more efficiently.** The Chile program developed a standard format for presenting projects and worksheets for defining a problem, analyzing its causes, developing indicators, and determining data sources. These tools were used in training so that teams could get a head start working on a real problem. Later, when the team worked on its own, these tools provided a helpful structure for quality improvement.
 - **Collaboration with universities and professional schools is mutually beneficial.** University participation in the program helped to reopen communication and collaboration between the Ministry of Health and the country's academic institutions. This had benefits for the EMC program, which had access to excellent trainers from the universities, and the universities themselves, which were able to include state-of-the-art QA methods in their curricula.
 - **Developing teamwork skills is essential for quality assurance.** In addition to learning quality assurance methods, work groups also need support in their ability to work in teams. In Chile, a special module on teamwork was developed for training quality monitors, who could in turn share these skills with local quality improvement teams as needed.

While the EMC program has achieved a great deal, many challenges still lie ahead to establish a comprehensive yet sustainable quality assurance system in the Chilean health sector. The authors hope that this report on the development of the EMC program will be useful to health systems in other countries that are working to build national quality assurance programs.

Part Two

Results

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I. Summaries of Selected Quality Improvement Projects, 1991–1995



BETWEEN 1991 and 1995, the EMC program in Chile generated more than 200 quality improvement projects and stimulated many other quality improvements without presenting them as formal projects. In general, the projects can be characterized as small-scale efforts to address locally defined health care problems, using a broad range of quality assurance methods and approaches.

Small-scale projects. Although some area-wide or regional initiatives are reported here, most projects were carried out on a relatively small scale, affecting the population served by a hospital, health center, or cluster of health centers. This phenomenon is the natural result of the program's emphasis on local initiative and control and the overall environment of decentralization. Because problems and priorities varied from one health center to another, it was not always practical to work in teams that represented multiple facilities. Consequently, results of these projects can be reported only in terms of the populations served and not in terms of their impact on national health statistics.

Locally defined health needs. Quality improvement project topics reflected locally defined health priorities, which ranged from cervical cancer, to dental hygiene, to waiting times, to diabetic foot care, to case management of acute respiratory infections. The problems addressed cover the wide spectrum of health concerns in a country undergoing a demographic and epidemiologic transition. Some segments of the population experience the problems that plague developing countries, such as malnutrition, respiratory infections, dehydration, and diseases preventable through immunization, while others are at greater risk for cancer, diabetes, hypertension, and other chronic conditions more prevalent in developed countries.

Methodological rigor. The level of methodological rigor varied considerably from project to project. Ideally, all quality improvement efforts should identify the problem clearly, document a pre-intervention measurement of it, define and implement an intervention, and then evaluate the effort. A good number of the projects in Chile did just this; however, many did not.

Table 1 presents an analysis of the 63 quality improvement projects described in this section with respect to whether the topic addressed related to compliance with clinical standards and to the use of quantitative measurements—methodological aspects of particular interest to the Quality Assurance Project. While the 63 studies are reasonably reflective of the quality improvement projects carried out in Chile during the period, the sample was not randomly selected and cannot be taken as an accurate measure of the more than 200 projects carried out from 1991 to 1994. Nonetheless, the analysis does underscore the fact that documentation of results was a weak area for many quality improvement teams. While most projects did some type of quantitative documentation of the extent of the problem or baseline measurement, more than half the projects did not collect data to document results of any intervention (though this proportion includes projects that did not move beyond the problem analysis stage). It is also interesting to note that even though the measurement of costs was not explicitly encouraged, at least three studies took the initiative to try to quantify the costs of quality failures or cost savings associated with quality improvements.

Table 1
Analysis of 63 Quality Improvement Projects

Of the 63 quality improvement projects described in Part Two, Section I, those that:	n	%
Addressed clinical guidelines	16	25.4
Measured compliance with clinical guidelines	6	9.5
Included a baseline measurement	41	65.1
Included a post-intervention measurement	27	42.9
Included analysis of associated costs	3	4.8

In some instances, health professionals detected a problem and took action to rectify it, but they were hesitant to document the severity of the problem beforehand for political or practical reasons rather than methodological ones. In such cases, improvements were likely achieved, resulting in real benefits to patients in the future, even though the magnitude of the improvements cannot be documented.

As noted, some of the projects ended up being diagnostic in nature, quantitatively describing a problem but stopping short of implementing an intervention and conducting a post-test. These projects are more aptly called assessments, rather than quality improvement cycles. This may have happened because staff were too busy with other responsibilities, because the problem turned out not to be as severe as they thought, or because the team did not have the institutional power to act on the problem. While some of these assessments may never be used for improvement, it is hoped that a number of them will provide critical information and lead to improvements when conditions for intervention are more favorable.

Other projects carried out assessments, sometimes exhaustive, and went on to design and implement interventions that were responsive to the situation. However, once the intervention was implemented and “seemed” to be working, the attention of workers was drawn to new problems, and the post-intervention assessment was neglected. Health team members see improvement daily, which makes it seem obvious and therefore unnecessary to measure. This is unfortunate, and more work needs to be done to make teams aware of the importance of documenting successes with data. But from the perspective of patients who benefit from these interventions, the quality improvement effort would not be considered a failure.

As the EMC program matures, and as quality improvement teams gain more experience with the methods, it is expected that quality improvement projects will become more quantitative and place more emphasis on documentation of results. This has already happened in Chile, where some of the later projects were carried out more quickly and were more rigorous because teams and coaches were more skilled and confident.

Taken together, the large number of quality improvement projects described in this report show that a QA program can motivate health professionals to improve service quality. In Chile, the EMC program has done just that in large and small ways throughout the health system.

To provide an illustrative range of the quality improvement projects undertaken in Chile in the first four years of the EMC program, selected projects are summarized below, organized under the following headings:

Health Care Services: maternal and child health; nutrition; preventive care for children; respiratory illnesses in children; other child illnesses; general adult care; diabetes; tuberculosis; women's health; drug and alcohol abuse prevention and treatment; and other health care services.

Support Services: laboratory services and pharmacy services.

Organization of Health Care Delivery: waiting time; hygiene and sanitation; patient information services; issues relating to the health team; and patient satisfaction.

The topics of the 63 quality improvement projects profiled here are shown in Table 2.

While there was a wide disparity in the quality and completeness of documentation of the improvement projects carried out at the local level, QAP files include final reports and additional information such as data collection instruments, drafts of guidelines, or examples of educational materials developed for many of the projects summarized here.

Table 2
Topics of Selected Quality Improvement Projects, 1991–1995

<p>Maternal and Child Health Improving Prenatal Care for Pregnant Teenagers Improving Monitoring Data for Low Birthweight Infants Encouraging Fathers to Be Present for Labor and Delivery in an Urban Hospital Sharing Parenthood: Prenatal Education for Couples</p> <p>Nutrition Timely Prescription of Iron Therapy for Pregnant Woman Improving Breastfeeding Promotion and Support Promoting Exclusive Breastfeeding up to Six Months of Age Improving Education about How to Use Nutritional Supplements</p>	<p>Preventive Care for Children Improving the Quality of Primary Care Provided during Pre-school Check-ups Health Education for Parents of Young Children Preventive Dental Care for Children under Two Years of Age Providing Preventive Dental Care to Remote Island Communities</p> <p>Respiratory Illnesses in Children Reducing Cost and Improving the Quality of Care for Bronchial Asthma Improving the Quality of Care for Acute Respiratory Infections (ARI) Preventing Illness and Death from ARI in a Poor Urban Area</p>
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Table 2 (continued)
Topics of Selected Quality Improvement Projects, 1991–1995

<p>Other Child Illnesses Reducing Waiting Time for Children Requiring Surgery with Local Anesthesia Improving Compliance in Drug Treatment for Children with Attention Deficit Disorder Evaluation of the Quality of Emergency Care for Pediatric Patients during Peak Hours Reducing the Inappropriate Use of Pediatrician Hours for Minor Conditions</p> <p>General Adult Care Assessment of the Quality of Records Kept by Medical Specialists Improving the Quality of Care for the Mapuche Indigenous Population</p> <p>Diabetes Quality Improvement in the Care of Diabetic Patients Results in Normal Blood Sugar Levels and Other Improvements Providing Foot Care for Patients with Diabetes</p> <p>Tuberculosis Reducing Discontinuation of Drug Treatment for Tuberculosis Improving the Early Detection of Tuberculosis</p> <p>Women's Health Decreasing Waiting Time for Hospitalization in Gynecology-Obstetrics Working to Decrease the Incidence of Vaginal Infection in Women Increasing Coverage of Screening for Cervical Cancer in Three Communities</p> <p>Drug and Alcohol Abuse Prevention and Treatment Development of Norms for Management of Alcohol and Drug Addiction Providing Treatment and Rehabilitation for Drug Addicts</p> <p>Other Health Care Services Decreasing Waiting Time for Geriatric Admissions and Reducing Inappropriate Admissions Expanding Preventive Services for Patients at Risk of Psycho-social Problems Proposal to Improve Care for Critical and Terminal Patients Improving Health Education for Hypertensive Patients Evaluation of Compliance with Norms for Nasal Aspiration</p> <p>Laboratory Services Developing Indicators for Evaluating Basic Laboratories at the National Level Reducing Waiting Time for Lab Results and Treatment for Patients with Abnormal Pap Smears</p>	<p>Laboratory Services (continued) Improving the Quality of Laboratory Services Improving Patient Compliance with Prescribed Lab Tests Improving Laboratory Services</p> <p>Pharmacy Services Improving Quality while Reducing the Cost of Pharmacy Services Taking Measures to Improve Patient Education about How to Take Their Medication Monitoring the Use of Supplies to Increase Cost-Effectiveness Improving the Process for Procuring Corrective Lenses</p> <p>Waiting Time Decreasing Patient Waiting Time in a Hospital-Based PHC Clinic Decreasing the Number of Patients Waiting More than 70 Minutes and Increasing Time Spent with the Doctor in a Specialty Clinic Working to Reduce Average Waiting Time in a Rural Health Post Reducing Waiting Time for Adult Care Reducing Waiting Time for Appointments with Pediatric Specialists in Referred Cases</p> <p>Hygiene and Sanitation Improvements in Hygiene in a Hospital Maternity Ward Working to Reduce the Incidence of Hospital-Borne Infections and Reduce Costs in Obstetrics-Gynecology Improving the Sanitary Conditions of an Urban Hospital Improving Physical Amenities and Privacy in a Maternity Ward Monitoring the Central Heating System</p> <p>Patient Information Services Improving Patient Information Services Establishing an Information Service for Hospital Patients and Their Families</p> <p>Issues Relating to the Health Team Evaluating the Work Environment and Staff Morale Restoring the Role and Functions of Social Workers in PHC Centers Training for Better Teamwork at the Health Center Level</p> <p>Patient Satisfaction Evaluating and Monitoring Patient Satisfaction Assessment of Patient Satisfaction with Ambulatory Services Assessment of Patient Satisfaction with Hospital Services</p>
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A. Maternal and Child Health

1. Improving Prenatal Care for Pregnant Teenagers

Area: Metropolitan North

Health facility: Area health centers

Team: Marcela Gomez, Trinidad Achondo, María Brito, Lidia Cortes, Genoveva Figueroa, Rosa Romero, Margarita Riviera, Monica Silva, María Salas, Fanny Berlagosky, Andrea Veloso, Marie Delgeil, María Manriquez, Jorge Vega, Luisa Martineau

The Metropolitan North Health Service has the highest rate of adolescent pregnancy in Chile, constituting 20 percent of all births in the area, resulting in approximately 3,200 teen births annually. In reviewing the prenatal care provided to these teenagers, a group of midwives in the area felt that the orientation given to teens during their first visit could be improved. They felt that teenagers were given an excessive amount of information and directions, owing to the large number of providers that they must see (social worker, nutritionist, dentist, laboratory, food supplementation, and others). Written information about appointments was given to teenagers on a series of small slips of paper that could be easily lost. This situation resulted in frequent returns to the midwife's office for clarifications. This left the teenagers feeling confused and disoriented. Further, the midwives felt that this experience might be affecting compliance with future prenatal care, which is especially important in this high-risk group.

In response to this problem, the midwives developed an orientation card for pregnant teenagers. It included essential information and a space to write down appointments with the various professionals. Through a small-scale pre-test of the card, it was established that the teens liked the card, found it useful, and intended to save it as a keepsake of their first pregnancy. Based on this pre-test, the orientation card was introduced in 12 of 13 area health centers.

The midwives evaluated the effectiveness of the card by applying a simple survey. They compared a group of pregnant teenagers who had received an orientation card during their first visit to a group who had received orientation without the card. Each sample comprised approximately 30 teens. As a result of the card's use, some notable improvements were achieved. Teens who received the card were more likely to make appoint-

ments with the nutritionist (46% vs. 16%) and the social worker (88% vs. 46%), two providers who can lend important support to this high-risk group. Teens who received the card also were more likely to know where they would give birth (100% vs. 63%) and where to go in case of emergency (100% vs. 46%). They were also more likely to know where to get their prenatal certificate (96% vs. 33%), which entitled them to government benefits that could enhance their quality of life and well-being during the pregnancy. Finally, all the teens interviewed had saved the card, illustrating that they valued the information it contained, thus ensuring that they will have the information handy when they need it. This successful effort shows how small changes can improve knowledge and compliance in a high-risk group, eventually leading to increased client satisfaction and better health outcomes.

2. Improving Monitoring Data for Low Birthweight Infants

Area: Libertador Bernardo O'Higgins

Health facility: Area health centers

Health team: Not listed

The regional primary care directorate uses information about birthweight of newborn infants to gain an overview of regional health status with respect to this indicator and to determine which sub-populations are at high risk for infant death and morbidity. However, when a group of midwives studied the quality of this information, they found that hospitals took approximately 45 days to send their monthly report of low birthweight (<2,500 g) and high birthweight (> 4000 g) infants to the regional office. They also found that when the regional PHC directorate asked the health centers for additional information about these cases, they took an average of 60 days to respond. Further, the information was not always complete and legible. Finally, the regional directorate said that they themselves did not summarize the information and send it back to hospitals and health posts for their use.

In order to improve the situation, the group proposed coordination meetings with the hospitals and health posts to discuss the problem and to clarify norms and procedures for reporting. They also agreed to prepare a monthly report for distribution to each health center, keeping them aware of the regional situation and how their area is doing in comparison. As a result of the intervention, which was implemented in June 1992, all

hospitals reported within eight days of the end of the month, health centers reported within 15 days, and health posts reported within 30 days. The regional directorate prepared summary reports and graphs that it sent to the health establishments. The information now provides high-quality data to make planning and programming decisions.

The team feels that this quality improvement effort was successful and valuable. Now that the reporting system is working effectively, the team would like to improve it by adding information about gestational age so that premature births can be detected from the register. Also, it would like to further develop the various uses of the information. For example, the regional office can use it to plan strategies for high-risk sub-populations at the regional level. Also, health centers can use the list they receive from the regional office to identify high-risk cases, indicating a need for post natal home visits. For this team, improving the quality of information was a first step in a process of continuous quality improvement.

3. Encouraging Fathers to be Present for Labor and Birth in an Urban Hospital

Area: Metropolitan South

Health facility: Hospital Barros Luco Trudeau

Team: I. Bahamonde, R. Namur, Lucrecia, L.F. Martines

This team worked to implement MOH and UNICEF initiatives to provide labor and delivery services that allowed mothers and fathers to have contact with their new babies at the time of birth and to encourage breastfeeding. A quality committee had been formed in the maternity ward and was responsible for implementing the new practices. In the first 10 months, fathers participated in approximately 500 births, with steady increases each month. As this effort was implemented, the team became aware that future success depended on other improvements in the maternity ward, and they initiated a quality improvement effort to improve the physical plant and hygiene so that it would be a healthy and pleasant place for new mothers and their babies.

4. Sharing Parenthood: Prenatal Education for Couples

Area: Metropolitan Central

Health facility: Consultorio Lo Valledor Norte

Team: Dra. Thelma Suauc C., María Cristina Gómez C.,
Sra. Soledad Balcazar R., Sra. Susana Carvajal F.

This effort began as a research program that sought to demonstrate the benefits of fuller paternal involvement in prenatal care, labor, and delivery. The intervention involved including fathers in prenatal visits and a prenatal course for couples that covered topics such as pregnancy, labor and birth, the newborn, breastfeeding, family planning, and communication between husband and wife. The team felt that the program would improve attendance at prenatal care visits, help mothers to follow instructions better, and lead to fewer consultations related to morbidity in the clinic and hospitals. Small samples of the study group (12) and a control group (11) were studied with the following results: Attendance at prenatal care sessions, which was 75% for the control group, was 100% for the study group. While only 65% of the control group followed the instructions that they received, 97% of the study group did so. Consultations at the health center (16%) and hospital (33%) were about the same, but the team pointed out that in the study group many of the visits were made by one mother, who had a very complicated obstetric history. Without this case, a difference in morbidity visits would have been measured. This small-scale evaluation encouraged the team to continue the program and work to expand it, so that it can be further evaluated with larger samples.

B. Nutrition

1. Timely Prescription of Iron Therapy for Pregnant Women (Within Three Weeks of Detection)

Area: Concepción-Arauco

Health facility: Consultorio Victor Manuel Fernández

Team: Rosa Bustos R., Erika González M., Dra. Andrea Castillo

Summary: Clinic records showed that 95% of pregnant women who were anemic (hemoglobin < 12) did not receive iron supplementation until after the 15th week of gestation. Further analysis of the problem revealed a lengthy delay between the date of the blood sample and the date when the patient returned to the midwife with the lab results and received a prescription for iron therapy. Only 12% of patients received their prescription for treatment within 20 days, and approximately 36% took more than 30 days. Through flowchart analysis, the team saw that much of the delay occurred in the interval between when the patient received the lab results and the next regularly scheduled prenatal visit. In response, the process was changed so that patients would check in with midwives immediately after lab results were received. This change in the process resulted in a marked improvement: 87% of patients received iron therapy within 20 days, and 65% received it within 10 days. Thus, anemic pregnant women received two to three weeks of additional iron therapy as a result of the study, providing benefits to both the mother and child.

2. Improving Breastfeeding Promotion and Support

Area: Metropolitan North

Health facility: Area health centers and hospitals

Team: Dra. Haydée Sepúlveda Bustos, Dra. Jerka Krstulovic Matte, Sra. Ruth Castro Villalobos, Sra. Carmen Fuentes Quiñones, Sra. Susana Tapia Moya

The health center staff in the Metropolitan North area of Santiago improved support for breastfeeding during the first six months of life, resulting in a rate of exclusive breastfeeding rate of approximately 60% at four months, with approximately 33% of mothers continuing exclusive breastfeeding until six months. Over a period of one year, the team worked to clarify norms for breastfeeding support, train staff in the

new norms, put in place a breastfeeding clinic, carry out selective home visiting, develop an educational flyer, and put into use an educational video on breastfeeding techniques. These interventions together resulted in an increase in the duration of exclusive breastfeeding and improved health professionals' knowledge about breastfeeding techniques (from 4.25 to 6.43 on a scale of 1 to 7).

3. Promoting Exclusive Breastfeeding up to Six Months of Age

Area: Talcahuano

Health facility: Primary health care centers in the area
(seven plus health posts)

Team: Health team of the Maternal Program

In order to increase the percentage of mothers who breastfeed their infants exclusively for at least 6 months, this team carried out training for the health team in which the norms and methods for promoting breastfeeding were reviewed. An assessment was carried out at the outset of the project and one year later. Four of the seven health centers showed marked increases in the prevalence of exclusive breastfeeding at six months (Higueras 7.7% to 25.6%, Hualpencillo 12.9% to 28.1%, San Vicente 34.9% to 63.2%, and Penco 50.3% to 70.0%). Three health centers and the health posts showed no significant change (Lirquen 27.7% to 27.7%, Tome 31.4% to 36%, Bellavista 9.6% to 12.6%, and health posts 31.2% to 33.3%).

4. Improving Education about How to Use Nutritional Supplements

Area: Concepción-Arauco

Health facility: Santa Juana and Florida Hospitals

Team: Patricia Albornoz B., Ruth Ruiz Merino

Nutritionists from two regional hospitals became aware that mothers of malnourished children and children at nutritional risk, were not receiving adequate education about how to use the government-provided nutritional supplements (PNAC). The content of the education was incomplete, and demonstration techniques were not used. As a result, mothers were not preparing the supplement correctly. The nutritionists instituted an educational program for mothers of malnourished children as well as pregnant women who were undernourished. Educational materials were developed, and mothers were trained in both hospitals so that all mothers

learned how to prepare the formula using graduated bottles. The program was successful, and the team decided to implement it permanently, not only for at-risk populations but for all PNAC recipients.

C. Preventive Care for Children

1. Improving the Quality of Primary Care Provided During Pre-school Check-ups

Area: Concepción-Arauco

Health facility: Isabel Riquelme Health Center

Team: Mireya Muñoz Cruz, Edith Poblete, Viviana Orrego,
Marisol Muñoz

After a process of problem identification and prioritization, this team decided to work at improving the quality of the pre-school check-up provided at the health center. Based on a review of clinic records (n=159), they found that care was substandard in 65% of cases. In response to the problem, workshops were held to review the technical norms.

2. Health Education for Parents of Young Children

Area: Iquique

Health facility: JUNJI Preschool/Day Care Centers in Iquique

Team: Not listed

This team worked to improve health-related knowledge and practices of parents of young children. They reached them by providing health education through the preschool/day care centers that are affiliated with the JUNJI, a Chilean government institution that serves the country's youth. The health education course covered self-care, nutrition, prevention, and food handling and lasted 20 weeks. To evaluate the program, the team planned to use parents' knowledge, absentee rates in pre-school, and, over the long term, the incidence rate of acute respiratory infections.

3. Preventive Dental Care for Children under Two Years of Age

Area: Metropolitan South

Health facility: Recreo Clinic in San Miguel Commune

Team: E. Castañeda, V. Vega, S. Orrego

In response to the high prevalence of cavities in pre-school children, this team developed an initiative to prevent tooth decay in toddlers. The intervention began during prenatal care, when mothers were examined, taught about dental health, and encouraged to breast feed. When the infant reached five to seven months of age, the mother was given education about the child's diet, and nutritionists assessed risk. High-risk infants were given fluoride supplementation immediately, while others began fluoride treatment at one year of age. At 16 months of age, tooth brushing and an initial exam were carried out, and the exam was repeated at 24 months. Overall prevalence of caries at two years of age was reduced from 30% to 13%, and correct tooth brushing technique rose from 18% to 73%. Knowledge of the importance of fluoride rose from 7% to 93%, and the number of mothers who thought caries were normal or to be expected dropped from 46% to 7%. According to mothers, drinking of soda dropped from 80% to 13%, and only 17% of two year-olds still used bottles, down from 22%.

4. Providing Preventive Dental Care to Remote Island Communities

Area: Aysen

Health facility: Mobile services to island communities of Melinka and Repollal

Team: Dra. Rosa Valdarrama, Dr. Manuel Encina Tapia

The Health Service dentist conducted an assessment of dental health in these island communities by carrying out oral exams in children under 15 in visits to 20% of households. He found a high incidence of caries and a lack of preventive measures such as tooth brushing and avoidance of foods that cause cavities. As a result, the team worked out a plan to include dental health in the package of preventive services provided by the visiting nurse responsible for these communities. Also, 10 grade school students were trained as oral health promoters. They provided information to their communities and distributed toothbrushes. An educational video was also developed. While statistical assessment was not undertaken in these small communities, the team reported that tooth brushing had increased dramatically. The visiting nurse reported that mothers of infants were eliminating sugar from the evening bottle of milk, an important measure to prevent caries in the very young.

D. Respiratory Illnesses in Children

1. Reducing Costs and Improving the Quality of Care for Children with Bronchial Asthma

Area: Metropolitan South

Health facility: San Luis de Buin Hospital

Team: J. Calderón, M. Ahumada

This team experimented with an alternative method to monitor and treat children with bronchial asthma. Rather than treating children through routine check-ups and emergency care for acute episodes of asthma, they taught parents to monitor peak expiratory flow rate (PEFR) at home and record the data. Parents were given inhalers to treat as needed and to prevent more serious problems and the necessity of antibiotic treatment. Parents met as a group with a therapist to receive continuing education and discuss problems or questions. It was expected that this regimen would result in less frequent check-ups, reduced time for children away from school, and a more active role for parents in the management of the asthma. In a pilot test of the treatment with 10 children, parent compliance with monitoring was 100%, and the average number of acute episodes during the month dropped from 5.6 to 0.7. School absence for these children dropped from 30% to 0, and 100% of the children were able to increase their level of physical activity. Overall, patients' PEFR status became more stable, dropping from 23.5% variation before treatment to 5.7% after treatment.

The new treatment model cost US\$12.73 per child, saving about \$34.80 per child. In addition to the direct savings, savings accrued because less specialty care and fewer drugs were needed. Thus, the effort saved money and improved care and health status at the same time.

2. Improving the Quality of Care for Acute Respiratory Infections

Area: Metropolitan West

Health facility: Seven area health centers (Yazigi, Santa Anita, Avendaño, Hernán Uruza, Pudahuel, Renca, Garín)

Team: Gloria Paez, Tamara Dominguez, Cristina Iribarra, Carolina Berrios

In the Metropolitan West Health Service, a team of physicians decided to assess the quality of care in treating acute respiratory infections (ARI).

They used a structured checklist to conduct a record review of 20 % of the cases seen in seven health centers during a three-month period in 1992 (n=264). The principal problems identified were 1) failure to record the degree of severity of the case; and 2) failure to record the respiratory assessment score. When the results were shared with providers, there was considerable discussion about whether these actions were carried out in practice. Many practitioners felt that they were carried out but not recorded. However, there was general agreement that this problem required attention, even if it was “only” a documentation problem, because failure to record this information could compromise the quality of care received as the patient moves through the health system. The intervention developed was a special stamp for ARI assessment that could be marked on the corresponding page in the patient’s medical record, providing a complete guide to documentation for the provider. The stamp was designed in collaboration with a group of providers. Stamps were then produced and distributed to the health centers. When the team conducted a follow-up assessment in 1993 (n=158), they found considerable improvements in performance. Record of risk assessment rose from 35% to 63%, record of score by doctors rose from 18% to 33%, and record of score by respiratory therapists rose from 16% to 54%. The team felt that the QA methodology helped them to analyze and improve the relatively new ARI pilot program. They also felt that it was important to continue the process for additional improvements. They noted that the two evaluations were done in different seasons (the evaluation was done in winter and the follow-up was done in fall), which could have distorted the accuracy of their results. Also, during the course of the study, ARI program leaders offered an additional training course in November 1992, which contributed to the improvements seen.

3. Preventing Illness and Death from ARI in a Poor Urban Area

Area: Aysen

Health facility: Coyhaique Urban Health Centers

Team: Dra. Rosa Valderrama, Dr. Sergio Hidalgo Ribee

This team conducted a survey of auxiliary health workers and mothers and found that ARI and the methods for prevention and case management were not well understood. As a result, they developed and implemented an educational program for members of the community and auxiliary health personnel.

E. Other Childhood Illnesses

1. Reducing Waiting Time for Children Requiring Surgery with Local Anesthesia

Area: Metropolitan South

Health facility: Exequiel González Hospital, Specialty Polyclinic,
Surgery Unit

Team: A. Savala, N. Valencia

Children in this specialty clinic waited more than three months for surgical procedures that required local anesthetic. The causes identified were insufficient availability of anesthesiologist and paramedical staff, supplies, and operating rooms in the morning hours. The intervention involved reorganizing staff and resources so that minor surgeries for children could be carried out in the afternoon, when the operating rooms were available. A schedule of two afternoons per week was set up, and paramedical staff schedules were shifted accordingly. The new schedule resulted in reduction of waiting time from three months to 15 days. Also, the number of cases attended increased from approximately 70 in 1994 to more than 100 in 1995.

2. Improving Compliance with Drug Treatment for Children with Attention Deficit Disorder

Area: Metropolitan South

Health facility: Valledor Tres Health Center

Team: L. Arias, L. Chavarría, O. Gallardo, N. Martínez, O. Serra

This team was concerned that drugs prescribed for children with attention deficit disorder were not being administered properly, with some drugs being lost or sold illegally. In order to improve the likelihood that drugs were administered properly, they developed an instrument to be used to monitor compliance with drug regimens, verify that drugs are in the home, and review how drugs are stored and managed. During the visit, they also provided support and education to families. As a result of the effort, compliance with treatment regimens rose from 57% to 93%. As a result of the household visits, the team observed that the children under treatment were severely stigmatized in the home, often viewed as dunces, nuisances or crazy persons. This situation required education and

orientation for families, which could also be carried out during household visits. As a result of this effort, similar programs were initiated in the care of epileptics and retarded patients.

3. Evaluation of the Quality of Emergency Care for Pediatric Patients during Peak Hours

Area: Metropolitan East

Health facility: Hospital Luis Calvo Mackenna

Team: María Eugenia Ayala R., Ximena Cabello M., Jeannette Flores L.,
Angel Fuentes Z.

This health team chose to identify a high-volume service and evaluate it, and then to make improvements on it. They surveyed patients who received emergency pediatric care during peak hours (3:00 to 7:00 p.m.), during which time care was provided for an average of 20.6 patients per hour. Some key findings are as follows: 1) Approximately 84% of those who sought care were from the designated catchment area; 16% were from outside. 2) Nearly 40% of cases had already sought care for the same illness episode, half of them at the PHC clinic. 3) Waiting time was not viewed as a major problem by patients' subjective judgements, with 57% saying the wait was short. Objective assessment showed that 35% of patients waited for less than 40 minutes, and another 35% waited for more than an hour. 4) 52% of children received treatment and 90% received verbal instructions for home care; 89% of parents said that they understood the instructions. 5) Of patients seen in the internal medicine department, only 40% of the children received a treatment slip with written indications for care; in surgery, the rate was considerably higher, at 85%. 6) More than 85% of patients were happy with the interpersonal communications with the receptionist, and satisfaction was even higher for medical providers and pharmacy. 7) More than 80% of patients felt that their health problems had been solved. 8) 95% said they would come back to the emergency room if they needed care.

4. Reducing the Inappropriate Use of Pediatrician Hours for Minor Conditions

Area: Magallanes

Health facility: Padre A. Hurtado Health Center, Punta Arenas

Team: Not listed

This team felt that the pediatric clinic hours were being used to treat minor conditions that could have been effectively treated by the primary care nurse. They planned to develop a triage process so that minor conditions could be identified and seen by the nurse only. In addition, they planned group education sessions with mothers so that they could learn to detect the signs of serious illness, particularly danger signs for pneumonia, so that they could make better judgements about when medical care should be sought. Because the center was closed for lack of funding, the team had a chance to implement only the assessment phase and some of the community education that had been programmed.

In response to the evaluation and other QA efforts in the hospital, a client information service was established. It included a reception desk, an information desk, and a desk for complaints, suggestions, and comments. The team defined objectives and skills needed for each of these areas. In addition to training of staff, the team planned to put a system of color-coded signs around the hospital to help in giving and following instructions.

F. General Adult Care

1. Assessment of the Quality of Records Kept by Medical Specialists

Area: Bío Bío

Health facility: Bío Bío Hospital

Team: Dr. Bustamente

In Bío Bío Hospital, a physician initiated a record review of seven medical specialties to determine the quality of the medical records. He found the quality to be incomplete across all seven specialties. He presented the results to the group of pediatricians, surgeons, internists, obstetricians, and other professionals. Initially, the response was not entirely positive. Some

providers expressed doubts about the study's validity and the importance of the findings. They blamed the overall system for the problem. Others recognized that the study gave them a sense of how they were performing and how they could improve, and while there were factors that were hard to control, there were things that the providers could do to improve.

Over the course of time, more of the staff received training in quality assurance, and they began to see the study in a new light. The new emphasis on quality made the region's clinical staff more receptive to the study. In early 1993, a medical records committee was formed to study this issue further and to develop ways to improve medical records so that patient care would be improved. The committee was made up of five physicians and had the support of the hospital director and all the specialty services.

This example is important because it illustrates a frequent experience of early quality improvement efforts. Without awareness about quality and top-level support, a quality improvement initiative can be rejected or misunderstood. Because broad-based awareness activities were taking place at the time of the study, the team leader was able to get sufficient support to move from evaluation toward improvement.

2. Improving the Quality of Care for the Mapuche Indigenous Population

Area: Araucanía

Health facility: Galvarino Hospital

Team: R. Curin, J. Ibacache, J. Neira, J. Nanco, A. Neira, F. Aliaga, M. Castro

In 1992, this team initiated an experiment in four high-risk communities that had a high concentration of indigenous people. They used participatory research methods and rapid assessment techniques, and worked through an intercultural facilitator who spoke Mapuche and understood the local culture and traditions. At the time of this report, seven intercultural facilitators were working in the health system, four local centers were operating to provide information, orientation, and assistance to the community, and health education materials had been developed in the Mapuche language. Educational workshops and further research are ongoing. This is an example of collaboration between government and

non-government organizations. At the national QA conference in 1995, an intercultural facilitator, Ramon Curin, gave testimony about his work. He described the indigenous concept of health and healing and the ways in which he helps local people get needed care through the Health Service. By being a translator of culture as well as language, he feels that he has helped to save lives and provide more respectful and humane care to the Mapuche.

G. Diabetes

1. Quality Improvement in the Care of Diabetic Patients Results in Increase in Normal Blood Sugar Levels and Other Improvements

Area: Metropolitan South

Health facility: Laurita Vicuña Health Center

Team: Pamela Burgos R., Inés Morales G.M., Margarita Vásquez B.

This effort aimed to improve the attendance of diabetic patients at their follow-up visits and to improve the quality of care they received. The team identified a number of causes of the problems, including lack of self care, changes in the appointment schedule, rejection of patients who sought care, and the social isolation of patients. The intervention was multifaceted, including raising awareness among staff about the quality deficiencies and how they could be corrected, review and improvement of records, clarification of norms for routine care, and group educational and recreational programs for diabetics. After one year of the program, a number of areas had improved. Participation in the program increased by more than 25%, and patient satisfaction improved. Inattendance was reduced from 25% to 20%, and the percentage of patients who were seen by a doctor and nurse on the appointed day rose from 75% to 89%. Quality of care also improved. Before the intervention monitoring of blood pressure and blood sugar levels occurred only 60 to 70% of the time, and a physical exam was carried out only 15% of the time. After the intervention, all of these activities were carried out 100% of the time. Further, patient blood sugar levels improved from 60% of normal before the intervention to 100% after the intervention. Before the intervention, none of the patients had normal weight, and after the intervention, 11% had normal

weight and 50% had lost weight (up from 30%). Also, as a result of the intervention, all the diabetic patients participated in a crafts program and successful group education.

2. Providing Foot Care for Patients with Diabetes

Area: Araucanía

Health facility: Eight area hospitals (Angol, Victoria, Traiguén, Loncoche, Lautaro, Gorbea, Villarrica, and Nueva Imperial) and one urban health care clinic (Miraflores)

Team: Nurses responsible for diabetes program

Nurses in the region determined that 10% of patients with diabetes had problems with their feet that required medical care. Nurses in the diabetes program were not acting on these problems owing to lack of technical knowledge, lack of the proper instruments, and distaste for the task. In response to this problem, a technical refresher course was organized and the needed instruments were procured. The evaluation after the intervention showed that, as a result of the effort, 61% of patients who needed foot care were in treatment.

H. Tuberculosis

1. Reducing the Discontinuation of Drug Treatment for Tuberculosis

Area: Metropolitan South

Health facility: Julio Acuña Pinzón Clinic

Team: Laura Rodríguez C.

Tuberculosis is an important health problem in the population served by this clinic. Using QA methods, the team identified discontinuation of treatment as a problem and devised measures to improve it. The intervention was multifaceted, addressing a number of the difficulties that tuberculosis patients face. The team shifted tuberculosis clinic hours to later in the day and established an evening session immediately following it for group education and support. They also introduced an incentive system whereby patients contributed 100 pesos at each visit. The money was given to new patients, as a reward for patients finishing treatment, and to

help patients who did not have money for transport. After two years, inattendance at check-ups dropped from 42% to 0, and discontinuation of treatment dropped from 37% to 6.3%. During this time, the number of patients in treatment was approximately 20. Parallel with this effort, a case-finding initiative was undertaken, with the aim of making this effective combination of drug therapy and education and support available to more people with tuberculosis.

2. Improving the Early Detection of Tuberculosis

Area: Aysen

Health facility: Mobile services to the rural community of Guadal

Team: Dra. Rosa Valderrama, Dr. Rodrigo Parra

In the remote rural community of Guadal, an increase in cases of tuberculosis was detected. While the community was too small to interpret this increase statistically, it was understood as a sentinel event that required attention. The team carried out a survey to assess knowledge and attitudes about tuberculosis and then developed educational materials that could be used at the community level. At the same time, they addressed problems in the process of sputum sampling, transport, and laboratory analysis. Finally, they conducted an educational seminar for health professionals, provided a self-instructional manual for paramedics, and increased supervision of norms and procedures related to tuberculosis at health posts. These measures together resulted in an increase in the number of tuberculosis tests taken, as well as the quality of the lab tests. During this period, the number of cases decreased, but the small sample sizes do not permit attribution of causality. Still, the team is confident that they improved service quality and coverage.

I. Women's Health

1. Decreasing Waiting Time for Hospitalization in Gynecology-Obstetrics

Area: Concepción-Arauco

Health facility: Guillermo Grant Benavente Hospital

Team: Matronas Rosa Bustos R. and Erika González M.,
Dra. Andrea Castillo

Clinic records showed that only 35% of patients were hospitalized within 30 days, which was the desired norm. The team used the fishbone diagram to analyze the various causes of the problem. The main emphasis of the intervention was to establish norms for admission and referral and to improve coordination between the primary care level and the hospital. For example, they proposed that all patients be evaluated in a primary care setting before admission to the hospital, except in difficult chronic cases, patients from extremely rural areas, or defined gynecological emergencies. A team made up of hospital and PHC clinic staff worked together to develop referral guidelines for the primary level. Also, they developed a schedule of regular meetings between PHC staff and hospital specialists to coordinate care. The new procedures were intended to be phased in over a six-month period, and the team hoped to reduce waiting time so that 90% of cases would be admitted in less than 20 days by August 1997. This project was presented at the 1995 Chilean National QA Conference, and evaluation had not yet taken place.

2. Working to Decrease the Incidence of Vaginal Infection in Women

Area: Aysen

Health facility: Mobile services in Manihuales

Team: Dra. Rosa Valderrama, Srta. Elizabeth Otazo Cruz

In a sample of approximately 90 women (22% of the population), 20% were found to have vaginal infections. A household survey was carried out (n=69) to assess knowledge, attitudes, and practice with regard to these infections. An assessment of the health service delivery process revealed that there was no follow-up as to whether or not women completed treatment for vaginal infections. In response to the magnitude of the problem, a number of interventions were carried out, including group education sessions in the community and the schools. Unfortunately, these sessions were poorly attended. A seminar for health professionals presented the results of the survey and reviewed case management, emphasizing the importance of verifying completion of treatment. Also, educational flyers were developed and distributed throughout the community. The monitoring effort that was designed to evaluate these interventions resulted in imprecise information due to a variety of causes.

3. Increasing Coverage of Screening for Cervical Cancer in Three Communities

Area: Aysen

Health facility: Communities of La Junta, Villa O'Higgins, Melinka/Repollal (island community served by mobile unit)

Team: Dra. Rosa Valderrama, Luis Rodriguez Cardenas

Routine monitoring showed that the number of Pap smears taken decreased alarmingly in 1990–91 in the three small communities of La Junta, Melinka/Repollal, and Villa O'Higgins. Further study of the problem revealed that while the number of Pap smears corresponded to a coverage rate of 40%, some of the Paps were repeat tests in the same women; therefore, the real coverage rate was approximately 20 to 28%. Death due to cervical cancer in La Junta was another sentinel event that motivated the team to act on the problem. The team took the following measures to improve Pap coverage rates: 1) establishment of a specific schedule when Paps were done, so that long waiting times—one important cause of the problem—would be decreased; 2) development and distribution of an educational flyer; 3) development of a video and educational presentations; and 4) making all staff available to help with the Wednesday afternoon Pap clinic. The first stage of follow-up monitoring showed that coverage for Pap smears increased in all three communities: by 20% in La Junta, 23% in Melinka/Repollal, and 25% in Villa O'Higgins. The team planned to continue the Pap clinic and educational activities so that coverage could be sustained and improved.

J. Drug and Alcohol Abuse Prevention and Treatment

1. Development of Norms for Management of Alcohol and Drug Addiction

Area: National

Health facility: Selected facilities in Iquique, Valparaíso-San Antonio, Metropolitan North, Talcahuano

Team: Dr. Alberto Minoletti S., Cristián Palma B., Veronica Monreal

At the 1995 national QA conference, this team presented work that was carried out by the Mental Health Unit of the Ministry of Health with

support from the Pan American Health Organization (PAHO). Using a workshop setting, the team developed guidelines for care of six conditions: management of acute intoxication, management of withdrawal, management of drug dependence, management of the accompanying physical disorders, management of accompanying psychiatric disorders, and management of social adjustment and reintegration into society. The norms developed were sent to all Health Services in Chile (26 at that time) and were tested in four Health Service areas that represented the country's diverse geographic conditions. Based on feedback from the Health Services and the field tests, the norms were revised and made available to the Health Services. The team recommended that evaluations be carried out annually in each Health Service and stressed that those who carry out the evaluations should have a background in substance abuse and should receive practical training in the use of the proper instruments.

2. Providing Treatment and Rehabilitation for Drug Addicts

Area: Metropolitan South

Health facility: La Feria Health Center

Team: M.E. Bustos, G. Pavez, P. Bertolini, F. Fernandez, C. Ramirez, I. Roa

One of the main substance abuse problems in the community served by this health center was the use of free base-cocaine, and sufferers had no access to treatment or rehabilitation. In response, the health team developed a program that included evaluation, home visiting, individual therapy, recreational activities, training, and drug therapy based on MOH norms for problem drinkers. The program began in November 1994 and by December 1995 had treated 188 patients, with the following improvements in quality of life: 51% of patients reduced their drug use; 36% abstained completely; 48% had returned to work or school; and 36% had developed adequate leisure activities for their free time. More than 40% saw improvements in their self-esteem, family relations, and social interaction. This successful experience led the team to recommend that this program be expanded to cover more individuals.

K. Other Adult Health Topics

1. Decreasing Waiting Time for Admission and Reducing Inappropriate Admissions for Geriatric Care

Area: Metropolitan East

Health facility: Geriatric Center

Team: Dr. Juana Silva O., Ana Valenzuela P., Alicia Zorrilla M., Mercedes Donoso C., Yolanda Aravena O., Elba Romero D., Patricio Garrido O., Alejandro Figueroa F.

The team evaluated the waiting time for admission of a small sample of geriatric patients (n=10) and found it to be an average of 18 days. In a review of 63 hospitalized cases, they found that only 44% met the criteria for rehabilitation, indicating that there were a number of inappropriate admissions. They felt that the problem had several possible causes, all relating to the admission process. They developed norms and procedures for evaluating cases to decide if they were appropriate for hospitalization. Within a month of implementing the new norm, they found that the waiting time was reduced by 10 days and a higher percentage of cases were appropriate for hospitalization. Monitoring in subsequent months showed that while some improvements were sustained, problems again arose, waiting time increased, and admissions procedures were not followed. The team felt that this relapse might be due to distribution of beds, turnover of medical staff, and discontinuation of referrals from clinics. Effective monitoring allowed the team to detect the fact that the problem was not completely solved. The team decided to modify their strategy and work for further improvement.

2. Expanding Preventive Services for Patients at Risk of Psycho-social Problems

Area: Iquique

Health facility: Videla, Guzmán, and Aguirre Health Centers

Team: Not listed

This team noted a lack of attention to the special needs of patients at risk for psycho-social problems. Prevention in this area was neglected overall, particularly in the aging population. As a result, the team developed training modules for specific groups of patients. Workshops were held for

pregnant women at risk, as well as chronic adult patients and aging patients at risk. Ongoing support in the form of group meetings was also established. The team felt that the program was very successful, and it was integrated permanently into the routine activities of the centers.

3. A Proposal to Improve Care for Critical and Terminal Hospitalized Patients

Area: Antofagasta

Health facility: Regional Hospital of Antofagasta

Team: Dr. Aliro Bolados C., Sra. Diana Edwards C., Sra. Eliana Escalera E., Sra. Nancy Espíndola

This team identified the absence of norms and services for critical and terminal patients as an area for quality improvement. In addition to establishing clinical norms for progressive care, they proposed to establish a sitting room for these patients and their families; to put up more dividers and curtains in the ward for privacy; to establish visiting hours; to develop educational materials for patients and families; to assess the training needs of personnel; and to develop an educational program based on those needs. They requested modest financial support from the Health Service for purchase of materials, education, and modification to the hospital's physical plant.

4. Improving Health Education for Hypertensive Patients

Area: Magallanes

Health facility: 18 de Septiembre Health Center, Punta Arenas

Team: Not listed

This team felt that patients who were being treated for hypertension were not getting adequate health education, which limited the effectiveness of the care given. They carried out an assessment that was based on an abbreviated list of educational messages. During the assessment, the interviewer provided the educational information that was omitted, so that the patients would go home with all the information they needed. Based on the diagnostic phase, the team revised the educational guidelines for hypertension, clarifying the priorities for providers. The impact of the effort was not evaluated.

5. Evaluation of Compliance with Norms for Nasal Aspiration

Area: Metropolitan East

Health facility: Luis Calvo Mackenna Hospital

Team: Carmen Gloria Busch, Vilma Cortés L., Jeannete Flores L.,
Nancy Suckel A., Gonzalo Hidalgo S.

A quality committee was formed as a result of a QA seminar held in May 1994. The team used a decision matrix and pareto diagram to determine a priority problem, which was inadequate technique in the suctioning of nasal secretions in hospitalized patients. Fishbone analysis showed that norms were not up to date and staff were not familiar with the norms. The team updated norms and developed an evaluation checklist. The checklist was used to observe 30% of the staff who carry out the procedure. The biggest problem was the failure to use gloves, which increased the likelihood of nosocomial infection. The team took measures to insure an adequate supply of gloves and made reminder signs that read "Put on Gloves before Aspiration," which hung in every location where the procedure was carried out. The team hoped that this small intervention would lead to fewer infections and, therefore, shorter hospitalizations resulting in lower costs. Evaluation after six to eight months was planned but had not been carried out when this project was presented at the National Conference in December 1995.

L. Laboratory Services

1. Developing Indicators for Evaluating Basic Laboratories at the National Level

Area: National

Health facility: 45 basic laboratories

Team: Coordinators of basic laboratories

Between 1990 and 1992, the number of basic laboratories in Chile increased from 15 to 47. It is estimated that 74,000 laboratory tests are carried out each month. Taking into account this growth and the high volume of services, the 1992 national seminar for laboratory coordinators focused on the development of indicators to monitor the quality of services and enlisted the assistance of the QA team. The coordinators worked in small

teams and then shared their work. After some debate and discussion they were able to come to agreement on a cluster of about 30 indicators that they recommended for review by the Health Services and the National Commission of Laboratories.

2. Reducing Waiting Time for Lab Results and Treatment for Patients with Abnormal Pap Smears

Area: Talcahuano

Health facility: Area-wide cancer program

Team: Sra. Ximena Reyes S.

This Health Service covers a population of 351,800 people, and cancerous tumors are the second leading cause of death. Cervical cancer is therefore a serious problem in the Region, and improving the time between detection and care is essential. The team felt that patients were waiting too long for lab results and treatment. The process was studied with a flow-chart and standards were set for each step, resulting in a process that should go from taking of sample to treatment in no more than 170 days. From 1993 to 1995 the team was successful in decreasing waiting time as follows: In 1993, only 38% of lab reports were received within the 22-day standard; in 1995, 100% were received within the standard. In 1993, 86% of patients had results confirmed by a biopsy within 29 days; in 1995, 100% had results confirmed in that time. In 1993, 85% of patients completed treatment within 90 days; in 1995, 100% completed treatment in that time. Most of the improvement was seen in the timely reporting of lab results, which had a significant impact on timely treatment and may have saved lives.

3. Improving the Quality of Laboratory Services

Area: Metropolitan West

Health facility: Laboratory, San Juan de Dios Hospital

Team: B.Q. Aurora Faccin M., T.M. Patricia Osorio O., T.M. Maritza

Sarmiento C., T.M. Gabriela Urriola J., Dr. Aurora Matus de la Parra

This laboratory launched a total quality effort with broad participation. Sixty-one staff members participated in sessions to identify and prioritize problems. Several groups continued to work in problems identified and took action for improvement. One important area for improvement was

laboratory supplies. The team carried out an assessment, based on laboratory records and interviews with staff, to evaluate the quality, quantity, and timeliness of supplies received. The evaluation showed that the quality standards were met 84.6% of the time, and that the quantity needed was provided only 15.4% of the time. Overall, the system was rated as good by 33.3% of respondents, average by 50%, and poor by 16.7%. These data led the laboratory to develop a new form for ordering supplies, make staffing changes, and provide training to staff members involved in the process.

4. Improving Patient Compliance with Prescribed Lab Tests

Area: Metropolitan East

Health facility: Anibal Ariztia Health Center

Team: Dr. Vicky Barahona K., Soledad Ishihara Z.

The quality improvement team in this health center laboratory found that 34% of patients did not show up for prescribed lab tests. In order to improve this poor compliance rate, the team put in place strategies to better inform patients about the importance of the lab tests and the procedures for scheduling. During the seven-month period after the intervention, compliance with lab tests rose from 66% to 86%, with an inattendance rate of 14%.

5. Improving Laboratory Services

Area: Atacama

Health facility: Copiapo Hospital and Laboratory

Team: Not listed

This hospital team carried out a variety of activities to improve laboratory services. Among the results that they reported were 1) establishment of a new appointment system in obstetrics; 2) improvement of the effectiveness of the obstetric service by redistributing functions; 3) improvement of tuberculosis screening by ensuring that all suspected cases had the appropriate blood sample; 4) improvement of record keeping by health professionals; and 5) inclusion of lab exams in the services offered in the rural medical rounds.

M. Pharmacy Services

1. Improving Quality while Reducing the Cost of Pharmaceutical Services

Area: Metropolitan South

Health facility: Barros Luco Trudeau Hospital

Team: M. Alvarez, N. Mardones, R. Vidal, M. Escalona, N. Montaña

The quality committee in this 112-bed hospital selected the administration of oral medications and injections as a high-volume service in need of improvement. A team was formed, and the analysis identified a number of causes, such as problems with prescriptions, supply, record keeping, and distribution systems. A number of changes were made, amounting to a redesign of the system: all paramedical staff were retrained in this area, roles of paramedics and nurse supervisors were defined and clarified, nurses were tasked with reviewing and verifying prescriptions and medicines distributed, changes were made in the prescription format and pharmacy schedule, and new procedures were introduced for doctors to submit prescriptions. A new record keeping system was put in place, as well as a system for returning unused medicines to the pharmacy. Based on evaluations pre- and post-intervention, the following improvements were seen: verification of medical indication (40% to 93%); verification of patient name (53% to 66%); verification of name of medicine (53% to 100%); timely administration of medication (67% to 93%); and correct administration of injectables (60% to 93%). Another important outcome of this study was the cost savings that occurred along with the improvement in quality. Savings from unused medications that were returned to the pharmacy added up to US\$1500 during the first 50 days after implementation, resulting in a savings of US\$30 per day.

2. Taking Measures to Improve Patient Education about How to Take Their Medication

Area: Viña del Mar-Quillota

Health facility: Health Center at Hospital de Limache

Team: Ruth Rosales, Paulina Allendes, Andrés Cubillos, Marisol Pimentel, Enrique Pizarro, Rodrigo Valencia

This team aimed to improve the quality of information given to patients about their medication, thereby increasing the likelihood of compliance and improving health outcomes. Fishbone analysis led them to identify the following causes: 1) there were no guidelines about what information should be given to patients who receive medication; and 2) different providers used different names for drugs (sometimes made up names) when talking to patients, adding to the confusion. The team decided that they needed an objective understanding of why patients didn't comply with treatment.

To further understand the problem, they carried out a survey of 145 randomly selected patients who received prescriptions over a three-month period. They found that 97% received information about the dosage and frequency of medication and that 83% were told the duration of treatment, but only 26% were told about side effects. While 85% of patients said they understood everything, of those who did not understand, 76% said they were informed but "they told me too quickly" or "I didn't have the courage to ask a question." Of patients who experienced side effects, 53% came back to the health center, but a full 34% stopped taking their medication. Analysis showed that, overall, patients did not have a correct understanding about the frequency of their medication. When it was expressed as "three times a day," 27% understood correctly, and when it was expressed as "every six hours," only 12% understood correctly. The two most important suggestions by patients were that the prescriptions be written more clearly and with more detailed instructions.

In response to this information, the team developed guidelines about how to educate patients about their medicines. They also developed guidelines that focused on patients with chronic conditions and the identification and management of side effects. They designed and implemented a new, easy-to-read prescription form with illustrations. Further, they put up educational posters that provided information in key areas. For example,

one poster clarified misunderstandings about frequency of medication, and another reminded people not to give their drugs to other members of their family.

3. Monitoring the Use of Supplies to Increase Cost-Effectiveness

Area: Viña del Mar-Quillota

Health facility: Peñablanca Hospital

Team: Dra. Ingrid Rojas Donoso, Srta. Fabiola Chamy Tapia,
Srta. Luz Alvarez Vidal

Based on hospital records and utilization data, the team found an increase in use of supplies without a correlating increase in patient care. They analyzed the problem with the fishbone diagram and presented the problem, along with possible causes and possible measures to be taken, to all hospital personnel. This information in itself, without any other intervention, had the effect of decreasing consumption in the following month. The hospital has also organized a participatory interdepartmental team to study the distribution of clinical supplies within the hospital.

4. Improving the Process for Procuring Corrective Lenses

Area: Ñuble

Health facility: Herminda Martín Hospital

Team: Dr. Alejandro Stevens Moya

This team found that failure to fill prescriptions for corrective eye glasses was a serious problem in the hospital-based ophthalmology clinic. Although prescriptions could be filled at any pharmacy, for many patients this option was too costly, and they relied on the hospital service to provide glasses. After analyzing the process used to order and distribute glasses, the team modified it to make it more effective. The problems they identified included the following: 1) patients sometimes chose frames that were not suited to their prescriptions, leading to wasted efforts and delays; and 2) all prescriptions were open, to be filled either at the hospital or by outside pharmacies, without making efforts to determine ability to pay, leading to equity problems. Three changes to the process were made. First, prescriptions were designated as hospital only or open, so that the most needy patients could receive free glasses. Second, the medical technician was assigned as a facilitator in the process of choosing glasses and

frames, so that appropriate choices could be made and patient preferences could be taken into account. A new flowchart for the procedure was developed and implemented. The team felt that there were still problems with the process, but that the QA effort helped them to make substantial improvements.

N. Waiting Time

1. Decreasing Patient Waiting Time in a Hospital-Based PHC Clinic

Area: Concepción-Arauco

Health facility: Health Center at Coronel Hospital

Team: María Teresa Benavente, Dra. María Rebeco

In response to long waiting times, this team made the following modifications to the procedures followed in a hospital-based PHC clinic: 1) implementation of a block appointment system; 2) informational pamphlets for mothers to clarify health center procedures; 3) a sound amplification system; and 4) improved directional signs. As a result, the percentage of patients seen within one hour increased from 20% to 49%, and maximum waiting time decreased from 5 hours to 2.5 hours.

2. Decreasing the Number of Patients Waiting More than 70 Minutes and Increasing Time Spent with the Doctor in a Specialty Clinic

Area: Metropolitan South

Health facility: Barros Luco Trudeau Hospital

Team: L. Dentone, R. Adasme, I. Álvarez, A. Pinochet, W. Vargas,
M.C. Navarrete

The Ear, Nose, and Throat Clinic at this hospital chose to work on decreasing waiting time for outpatient visits. The causes of the problem were many, including inadequate staffing, scheduling problems, problems with patient records, and delays after patients were called for their appointments because of the noisy, crowded waiting room. In response to the problem, the team made changes in doctors' schedules and clarified the scheduling procedures. They also set up regular communication between the doctors and administrative staff. In addition to these management interventions, they put in place an intercom system that permitted staff to

announce visits so that patients could hear. As a result, the percentage of patients seen in less than 70 minutes increased from 8% to 45%. The number of patients who waited more than 140 minutes dropped from 31% to 8%. Further, the length of time that patients spent with the doctor increased. The percentage of patients who spent between 15 and 30 minutes with the doctor increased from approximately 10% to nearly 40%.

3. Working to Reduce Average Waiting Time in a Rural Health Post

Area: Concepción-Arauco

Health facility: Santa Juana Health Post

Team: Dr. Marcos Zárate A., Sr. René Duran J., Abigail Urbina P.,
María Quezada Z., Juan Salazar F., Samuel Acuña F.

This rural health team, which serves approximately 5,367 people, calculated that waiting time at their clinic averaged three hours and 30 minutes, with a maximum of five hours and 10 minutes and a minimum of one hour and 50 minutes. The team used the fishbone diagram to make an honest analysis of a very common problem. They decided to focus on a principal root cause that was within their control: the schedule of the health team. They determined that the hour of departure from the hospital, unless there were problems with the vehicle or another medical emergency, would be no later than 9:00 a.m. This project was presented at the 1995 Chilean National QA Conference, and evaluation had not yet taken place.

4. Reducing Waiting Time for Adult Care

Area: Magallanes

Health facility: Miraflores Health Center, Punta Arenas

Team: Not listed

This team aimed to reduce waiting time by developing an appointment system for chronic patients seeking care so that they would not be mixed with adult patients seeking care for discrete illness episodes. They also hoped to improve the compliance of health professionals with the hours assigned. The assessment was completed and suggestions were made about how the process could be changed. Unfortunately, in the meantime, the health center was moved and modified, which completely changed the conditions out of which the effort arose.

5. Reducing Waiting Time for Appointments with Pediatric Specialists in Referred Cases

Area: Magallanes

Health facility: Oscar Bonilla Health Center, Punta Arenas

Team: Not listed

The team attempted an assessment to describe the problem more precisely but were not successful in quantifying the problem. However, they were able to develop the following suggestions for improving the system: 1) reserve a number of appointments in the various specialties that could be assigned directly by the referring health centers; 2) to avoid under-utilization of space, have the health center call to confirm that appointments had been assigned; 3) make sure that health centers are informed about schedule and other changes that take place at the specialty clinic; and 4) develop guidelines for referral for the various specialties, to be followed by health center doctors.

O. Hygiene and Sanitation

1. Improvements in Hygiene in a Hospital Maternity Ward

Area: Metropolitan South

Health facility: Barros Luco Trudeau Hospital

Team: M.V. Saldivia, G. Santander, M. Núñez, X. Tagle, M.A. Bello,
X. Moraga, N. Riveros, M. Castillo, N. Briones, I. Bahamonde,
L. Namur

This team applied QA methods to improve the hygiene and physical plant of the maternity ward. The analysis of the problem underscored the need for an integrated intervention that included development of procedures for cleaning, training and motivation of staff, a system of regular meetings, acquisition of an industrial strength cleaning machine and supplies (US\$1,900) and a supervision and reporting process. The effort was very successful in improving the maternity ward, which is now maintained as a clean and inviting place. The practices of cleaning staff improved substantially. Before the intervention, only 15% of staff completed their entire shift, and none of the workers completed all the tasks that needed to be done. After the intervention, performance rose to 78% and 85%,

respectively. The availability of needed supplies rose from less than 60% to more than 90%. As a result, the cleanliness of wards, corridors, and baths rose from 50 to 60% of the norm to 85 to 90%.

In addition to achieving these specific goals, this QA effort helped the quality committee members learn to work together and to establish themselves within the hospital as a group that was making visible improvements in care and in perceptions about quality. The checklists they used stimulated wider interest in the use of observation checklists for supervision. The information gathering carried out gave the group ideas about future directions for improvements beyond this study.

2. Working to Reduce the Incidence of Hospital-Borne Infections and Reduce Costs in Obstetrics-Gynecology

Area: Bío Bío

Health facility: Victor Ríos Ruiz Hospital

Team: María Gabriela Aliaga Muñoz, Pedro Fonseca Garcia,
Irma Haydée Herrera Riveros, Dr. Luis Francisco Klaassen Pinto

This team focused on hospital-borne infections in the Obstetrics-Gynecology Department in conjunction with a larger area-wide initiative to prevent and control hospital-borne infections. They identified two aspects of the problem: serious under-reporting of infections and the lack of norms or guidelines about prevention of infection. The team planned to hold a workshop to develop guidelines for prevention of infection in general areas such as hand-washing and use of disinfectants, and specific areas such as prophylactic antibiotic use in caesarean sections and care of the incision after an operation. The norms would be monitored via a supervision checklist. They also made efforts to achieve fuller reporting of infections when they occurred by raising awareness about the importance of the problem and clarifying the reporting procedures. In addition, they carried out an analysis of cases to learn more about the kinds of infections that were taking place and their probable causes.

At the time of this report (December 1995 National Conference), considerable progress had been made. The workshops had been held and guidelines had been developed and implemented. Training resulted in significant improvements in knowledge. The average score on a written test for 146 paramedics rose from 47% correct before training to 71% after training.

Observation of hand-washing techniques before and after training revealed an improvement in overall compliance with the norm from 14% to 30%. While some small changes in practices were noted, most of the improvements were due to reliable supplies of water, soap, and clean towels. The team concluded that to reach 100% compliance with hand-washing, more training and supervision were needed.

Progress in reporting of infections also occurred. The first three quarters of 1995 showed that the rate of reported infections had increased from 0.6% in 1994 to 3.2%, which the team felt was more realistic.

Case analyses led the team to ask themselves more questions about the infections experienced in their unit. They noted that in many cases antibiotic prophylaxis was not recorded when indicated. They were not sure whether it was a recording problem or an actual omission of care, and this topic was identified for further study.

Analysis of the cost of care revealed that for the first nine months of 1995, patients with infections used 830 hospital days, 540 of which can be attributed to their infections. Thus, the efforts made here are likely to go a long way to improve quality and reduce costs by more than half.

3. Improving the Sanitary Conditions of an Urban Hospital

Area: Metropolitan East

Health facility: Luis Calvo Mackenna Hospital

Team: Dr. Julio Montt, Matilde Osses, Titania Moraga, Vilma Cortes,
Claudia Vasques, Silvana Cavallieri, Virginia Valdés, Cesar Manaka

The hospital contracted out routine cleaning to a local service. However, the job was often incomplete or incorrectly done. When the team analyzed the problems they realized that the health staff was not familiar with what the cleaning service was contracted to do and had no say in defining the sanitation needs or in evaluating performance. They worked together to determine what should be done and set up a system of supervision and review so that the cleaning service could get feedback and correct errors. Also, they instituted an annual review that would involve health center staff in the decision about whether or not to renew the contract. The improved communication between the cleaning staff and hospital

personnel led to great success. The team was much happier with the service that was performed, and the improved sanitation meant that patients would be more satisfied and less likely to incur infection in the hospital.

4. Improving Physical Amenities and Privacy in a Maternity Ward

Area: Concepción-Arauco

Health facility: Coronel Hospital Maternity Ward

Team: Not listed

A patient satisfaction survey revealed that many patients found the waiting area to be crowded and uncomfortable. One hundred percent said that they felt a lack of privacy during the clinical encounter because there were people in the halls and doorways. The team used local resources to put lighting and benches in the waiting room and to install a door between the waiting room and the hall where the examination rooms were located. According to the perceptions of the health team, patients' sense of privacy and satisfaction was greatly improved.

5. Monitoring the Central Heating System

Area: Concepción-Arauco

Health facility: Lebu Hospital

Team: Jorge Neira Arias, Juan Monsalvez Arias, Pedro Muñoz Cisternas

This team was responsible for the hospital heating system, which was constructed in 1969 and supplies heat and hot water for a 68-bed hospital and a PHC clinic. They developed nine key process indicators of quality for their work and a checklist to use for ad hoc monitoring. Indicators related to maintaining proper water and air levels and using proper procedures to light the system. This project demonstrated how non-clinical staff can contribute to quality by making a system that is crucial for sanitation and comfort more reliable.

P. Patient Information Services

1. Improving Patient Information Services

Area: Concepción-Arauco

Health facility: Santa Juana Hospital

Team: Sr. Juan Zuñiga, Srta. Susana Sanhueza, Srta. Gladys Araneda,
Sr. Mario Ríos, Sr. Alexis Salas, Sr. Patricio Olivares,
Dr. Marcelo Mercado

The team determined that approximately 30% of the clients in this 50-bed hospital did not receive adequate information about their care. They used the fishbone diagram to analyze the problem and decided that the lack of norms or a system for providing information was a principal cause of the problem. They established an information desk, assigned staff to it, and developed guidelines for its functions. They planned to use a checklist to periodically evaluate whether the information services were adequate in seven areas: 1) courteous attention from staff; 2) status of patient; 3) communication of needs of hospitalized patient; 4) information about patient transfer or release; 5) visiting hours; 6) information about the location of various hospital services; and 7) schedule of ambulances.

2. Improving Patient Information Services

Area: Metropolitan South

Health facility: San Luis de Buin Hospital

Team: Ximena Saavedra, Bernadita Mancilla

This 120-bed hospital serves a population of 94,000. The team chose to improve patient information because they felt that it was an opportunity to address an important area of concern for patients and would improve their public image. After discussion with community leaders and interviews with patients, they decided to form an information unit (SAP). They trained all hospital staff through 10 workshops and promoted the initiative on the radio and via flyers and posters. The function of the SAP was to provide general information, deal with complaints and comments, and answer questions about patient status. The SAP was also expected to monitor basic information about patient satisfaction. In addition to staffing the unit, the number of telephone lines was increased from five to nine and a direct line for information about hospitalized patients was added.

As a result of the intervention, more information has been given to patients by phone (570 calls in month one increased to 1,409 calls by month four). The information given via the direct line has also increased, from 379 to 1,400 calls. The number of complaints and compliments registered each doubled (to 35 and 20 per semester, respectively), indicating that the public is using the information service, and all complaints were reviewed and responded to by the hospital director or the head of the unit responsible.

The SAP's ongoing patient surveys also provide valuable information to the staff. Results from 1995 showed satisfaction to be high, with the responses at 80% or greater for indicators of satisfaction, such as courteous treatment by staff, adequate privacy, and whether the patient would recommend the hospital. More than 80% knew the name of their doctor and their diagnosis, and about 70% felt that the duration of their stay had been adequate.

3. Establishing an Information Service for Hospital Patients and Their Families

Area: Metropolitan South

Health facility: Barros Luco Trudeau Hospital

Team: R. Soto, P. Aravena, F. Márquez, M. Castillo, G. Santander, V. Herrera, O. Rodriguez, E. Tobar, W. Vargas, R. Vidal

The hospital quality committee chose to work on improving information to patients and families as its major goal for 1995. The causes of the problem were many: lack of coordination among staff and lack of clear procedures for reception, suggestions, and complaints; visiting hours; and informing patients and families about their conditions. In response, an information unit was formed, procedures were developed and communicated to staff through a series of training sessions, and ongoing supervisory meetings for follow-up were established. A group of monitoring indicators was also defined. Indicators included the percentage of patients who know their diagnosis and treatment and the percentage of families who know the diagnosis and treatment. Initial assessments were made in 1995, with the intention of monitoring progress over time.

Q. Issues Relating to the Health Team

1. Evaluating the Work Environment and Staff Morale

Area: Arica

Health facility: Area PHC clinics

Team: Sergio Sánchez Zubicueta, Ana María Naranjo Garate

This team of Health Service supervisors chose to assess the work environment and health worker morale in four health centers. They developed an evaluation tool to assess human relations, professional relations, and the physical environment. They hoped the tool would also be useful as a monitoring instrument. The physical environment was the area with the most deficiencies: 61% of respondents do not have access to a place to hold technical meetings, and 83% did not have a place to conduct patient education. Also, the staff felt that the centers were overcrowded: 61% had no place to put their personal belongings during the work day, and 53% did not have a place to eat lunch. The assessment showed that overall interpersonal relations were good: staff greeted each other cordially, had friendly relations, and expressed willingness to socialize occasionally with colleagues from the workplace. Professional relations were also positive, with the majority rating relations as “good”; however, there is room for improvement, since this was the midpoint of a five-point scale. Areas for improvement include meeting attendance (more than 50% of auxiliary personnel do not attend meetings) and incentives such as positive feedback (35% of staff have never received praise for their work).

2. Restoring the Role and Functions of Social Workers in PHC Centers

Area: Iquique

Health facility: Videla, Guzmán, and Aguirre Health Centers

Team: Not listed

Social workers in primary care centers in this area were not carrying out their intended functions because they had limited hours, and the hours that they did have were often assigned to the administrative task of verifying that clients had a right to be treated at the centers where they sought care. They were also assigned to assist in the urgent care center. As a result, they could not provide counselling support or function as

integrated members of the health team. In response to this problem, the municipality provided administrative support on a provisory basis (for three months) so that social workers would be free to do their intended tasks.

3. Training for Better Teamwork at the Health Center Level

Area: Osorno

Health facility: Puyehue Health Center

Team: Karin Mardorf Skoruppa

This team began with a survey to assess interpersonal relations and management in May 1995. The results of the study were shared with the staff and health area supervisors in June. As a result, a teamwork training course was given in July. After the seminar, a participatory process of problem identification was initiated. The team planned to repeat the initial survey after one year, as well as to evaluate the overall quality improvement effort by reviewing the results achieved in problem areas.

R. Patient Satisfaction

1. Evaluating and Monitoring Patient Satisfaction

Area: Viña del Mar-Quillota

Health facility: Quilpue Hospital

Team: Dr. P. Olivares T., Guillermina Walker Casanova, M.V. Chacón F.,
Alejandra Miranda Bustos

This team developed and tested a patient satisfaction evaluation modeled after the U.S.-based Joint Commission on Accreditation of Healthcare Organizations questionnaire, in which patients are asked to give a grade for various aspects of care such as medical, nursing, and paramedical care, as well as a number of amenities such as the cleanliness and quality of food services. The evaluation included 628 patients from six different clinical areas. Overall, they found that clinical care was considered excellent, with room for improvement in a number of the amenities of care. The suggestions and recommendations were compiled and reported to the hospital administration for consideration. The team found the information useful and the evaluation to be feasible to carry out. They recommended that the indicators be monitored on an ongoing basis.

2. Assessment of Patient Satisfaction with Clinic-Based Ambulatory Services

Area: Araucanía

Health facility: Permanent Health Center, Collipulli Hospital

Team: Dr. Claudio Arias, Dra. Mónica Concha, Dr. Alejandro Enriquez C.,
Sra. María Castillo G., Sra. Eliana Silva S.

A household survey of 148 health center clients was carried out in the health center service area. Results showed that 38% of respondents used the health center at least once a month, and 51% felt that it was difficult to get medical attention. Sixty-nine percent also felt that the waiting time was too long. Once seen, 77% of respondents rated the care to be good or very good. However, only 65% felt that they had enough time with the provider. When asked if the doctor tells them their diagnosis, 46% said always, and 33% said usually not. Regarding the timeliness of lab tests, 40% said that they were done the following day, and 79% said they were done within the week. In reaction to these results, the team felt that a new appointment system should be implemented, so that waiting time could be reduced. Further, they wanted to take measures to improve patient-client relations.

3. Assessment of Patient Satisfaction with Hospital Services

Area: Araucanía

Health facility: Collipulli Hospital

Team: Dr. Claudio Arias, Dra. Mónica Concha, Dr. Alejandro Enriquez C.,
Sra. María Castillo G., Sra. Mónica Aravena, Sra. Eliana Silva S.

A patient satisfaction survey was carried out immediately after patients were released. They were asked about their perceptions of their condition and the quality of medical care received, as well as the amenities of care. Ninety-two percent of respondents felt that their condition had improved, and 94% said that the medical care was good. However, 20% said that they did not understand the instructions given to them by the doctor when they left the hospital. Seventy-seven percent of respondents evaluated paramedical care as good, and 85% expressed general satisfaction with their care. Satisfaction rates were much lower for non-clinical aspects of care such as cleanliness (51% not satisfied), food services (49% not satisfied), and noise level (27% not satisfied).

II. Quality Assurance Activities and Institutionalization in the Regions and Health Services, 1991–1994



THIS section reports on the quality assurance programs developed in the majority of Chile's decentralized Health Services, as well as some regional level programs. The information presented covers the period 1991–1994, when the Quality Assurance Project provided assistance to the national EMC program. For each Health Service, the report describes achievements in capacity building at the PHC and hospital levels and institutionalization in terms of the establishment of quality committees and identification of local quality monitors. Formal quality improvement projects carried out during the reporting period are listed, as well as ad hoc improvements that were made as a result of the program without being formally presented as projects.

Taken together, these Health Service quality assurance profiles show the broad and dynamic nature of the Chile program, where, by design, activities have developed according to local needs.

A. Region I: Arica, Iquique

1. Arica Health Service

Training: 33 at PHC level
83 at hospital level

Organization: 2 Quality Committees (Juan Noe Hospital; Arica SERMUS)

10 Quality Monitors:

Dr. Sergio Sánchez, DAP
Sra. Ana María Naranjo, DAP
Sr. Ricardo Zepeda, Juan Noe Hospital
Sra. Ligia Durán, Juan Noe Hospital
Sra. Lissette Barraza, Juan Noe Hospital
Sra. Inés Carmona, Juan Noe Hospital
Sra. Texia Aravena, Juan Noe Hospital
Sra. María Eugenia Rosales, Juan Noe Hospital
Sra. Ximena Portales, Juan Noe Hospital
Sra. María Pavez, Juan Noe Hospital

Quality Improvement Projects:

- Improvement of prenatal care coverage and indicators in Putre Rural Health Post
- Assessment of information provided to mothers by vaccination assistants at Arica Primary Health Care Department (DAP)
- Quality assessment and improvement in the Patient Fee Collection Office (SOME) of Arica Hospital

Ad hoc Improvements:

- Creation of an Office of Information for patients in Juan Noe Hospital
- Development of posters to orient patients in the SOME
- Improvements in user satisfaction among PNAC clients in the Victor Bertín Clinic
- Reduction of waiting times to see nutritionist at the Victor Bertín Clinic
- Following client survey of the Victor Bertín Clinic, new schedule developed for adult and pediatric care
- Improvement in the schedule of midwife in Dr. Abel Garibaldi Clinic
- Adequate information provided to the Neighborhood Councils concerning location and steps to be undertaken related to the work of the Environmental Health Program

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- Implementation of periodic rounds in Parinacota Province
 - Participation in the creation of a new health administration system in Parinacota Province, Putre Rural Health Post
 - Increase in coverage of the educational program of the Maternal Health Program
 - Increase in community participation in the Visviri Rural Health Post
 - Development of quality evaluation criteria for psychosocial area community activities
 - Improvement in personal treatment of patients in the Maternal Health Program (change in attitude of health professionals toward patients)

2. Iquique Health Service

Training: 21 at PHC level
 43 at PHC and hospital levels (combined training)
 80 at hospital level
 2 DAP professionals

Organization: 1 Quality Committee (Iquique Hospital)
 5 Quality Monitors:
 Dr. Felipe Platero, Iquique Hospital
 Sr. Rafael Villalobos, Iquique Hospital
 Sra. Adriana Kosanovic, Iquique Hospital
 Sra. Nora Medel, Iquique Hospital
 Sra. Dolores Romero, Iquique Hospital

Quality Improvement Projects:

- Placement of eligibility assessors in the three urban PHC clinics of Iquique
- Improvement in health education in Government Youth Agency (JUNJI) nursery schools

B. Region II: Antofagasta

1. Antofagasta Health Service

Training: 38 at PHC and hospital levels (combined)
2 additional training courses conducted at the hospital level, total number trained unspecified
2 DAP professionals

Organization: 3 Quality Committees (Calama Hospital, Tocopilla Hospital, Mejillones Hospital)

2 Quality Monitors:

Sr. Luis Acuña, Mejillones Hospital

Sr. Oscar Gallardo, Mejillones Hospital

Ad hoc Improvements:

- Development of assessment criteria and standards for nursing services
- Inclusion of quality assessment in Calama Hospital's local implementation and monitoring program

C. Region III: Atacama

1. Atacama Health Service

Training: 57 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 1 Quality Committee (Santa Elvira Clinic)

Quality Improvement Projects:

- High proportion of rejections of lab samples at Central Laboratory
- Low level of testing for gonorrhea at PHC clinics
- 23% of urine cultures polymicrobial at Copiapó PHC Clinic

Ad hoc Improvements:

- Scheduling of obstetric patients on different days and recording on appointment cards, resulting in reduction in waiting times
- Improvement in the internal organization of the Obstetrics Service at Copiapó Hospital by redistributing functions among personnel
- Reordering of the warehouse and pharmacy, resulting in improved dispensing of medications and reduction in costs
- Implementation of internal quality control in bacteriology in the hospital laboratory
- Meetings scheduled with hospital personnel to discuss personal treatment of patients
- Improvements in daily reports and more accurate reporting of pathologies, resulting in improved program coverage
- Taking of laboratory samples added to Rural Rounds (increasing population access to laboratory services)

D. Region V: San Felipe-Los Andes, Viña del Mar-Quillota, Valparaíso-San Antonio, SEREMI (Regional-Level Health Office)

1. San Felipe-Los Andes Health Service

Training: 55 at PHC level from the 3 Health Services in Region V
2 DAP professionals

Organization: 1 Quality Committee (Health Service)
2 Quality Monitors:
Sra. Ana María Plaza
Sra. Ana Ortega

Quality Improvement Projects:

- Cervical cancer screening in Llay-Llay Health Clinic
- Quality of medical records in the child health program

Ad hoc Improvements:

- Flow diagram prepared to analyze what happens with PNAC beneficiaries who fail to keep scheduled appointments or who lose their cards in the San Felipe General Urban Clinic
- Preparation and analysis of a flow diagram to improve coordination within the clinic

2. Viña del Mar-Quillota Health Service

Training: 55 at PHC level
48 at hospital level
2 DAP professionals

Organization: 1 Quality Committee (Ligua Hospital)

Quality Improvement Project:

- Improvement in the pharmaceutical system (prescriptions) for Chronic Illness Program

Ad hoc Improvements:

- Differentiation of schedule by sector; improved information from the administrative offices in Cienfuegos Clinic

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- Reorientation of SOME personnel, Petorca Hospital, Permanent Clinic
 - Reorganization of hospitalization and Permanent Clinic activities, Ligua Hospital
 - Quality audit of treatment of patients with convulsions to reorganize card files and increase accuracy of diagnoses in the Quillota General Urban Clinic
 - Reduction in absenteeism among diabetic patients following group education
 - Reduction in patient waiting time by eliminating bureaucratic barriers in the Santa Julia Urban Post
 - Beginning medical care (by the director) at 8:00 to 8:30 a.m. and assigning each patient a specific, adequate amount of time in Quillota Clinic No. 1

3. Valparaíso-San Antonio Health Service

Training: 2 DAP professionals

Organization: 1 Quality Committee (Health Service)

2 Quality Monitors:

Dra. Pilar Fernández

Dra. Rosario Rocco

Quality Improvement Projects:

- Improvement in quality and transport of laboratory samples in the Health Service
- Screening of children at risk of malnutrition in Los Placeres Clinic

4. Region V SEREMI

Training: 2 SEREMI professionals

Organization: 1 Regional Quality Committee

2 Quality Monitors:

Sra. Alejandra de La Vega

Sra. Nolvía Valdés

E. Metropolitan Region: West, East, North, South-East, South, Central, Environmental

1. Metropolitan West Health Service

Training: 51 at PHC level
2 DAP professionals

Organization: 1 Quality Committee (Renca Municipal Health Corporation)
2 Quality Monitors:
Dra. Carolina Berríos
Laboratory Coordinator

Quality Improvement Project:

- Improvement in the quality of care of ARI patients

Ad hoc Improvements:

- Improvement in management of the clinics
- Pap campaign
- Reduced number of older patients turned away and reduction in waiting times by assigning different appointment times in Andes Clinic
- More personalized treatment of patients in Yazigi Clinic
- Nutritional intervention to enhance recovery of breastfeeding children under 23 months in Renca Clinic
- Initiation of client satisfaction survey in Renca Clinic
- Improved flow of Pap patients in Renca Clinic
- Client satisfaction survey conducted in Steeger Clinic
- Use of gloves by cleaning staff in Steeger Clinic (preventive measure for handling contaminated waste)

2. Metropolitan East Health Service

Training: 18 at PHC level
87 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 3 Quality Committees (San Luis de Macul Clinic; Vitacura Clinic; Dr. Anibal Ariztía Clinic)

4 Quality Monitors:

Dra. Helia Molina, DAP
Sra. Ana María Tomasevic, DPP
Sra. Leyla Rumié, DAP
Sra. Andrea Morgado, Rosita Renard Clinic

Quality Improvement Projects:

- Low percentage of children with nutritional deficit re-evaluated in PHC clinics
- Absenteeism after leaving PNAC
- Absenteeism of clients of Nursing, Nutrition, and Maternal Health Units

Ad hoc Improvements:

- Improvement in the quality of patient care by midwives at San Luis Clinic
- Reorganization of the Adult Program at San Luis Clinic
- Improvement in internal coordination in Apoquindo Clinic
- Assessment of nursing programs at La Barnechea Clinic
- Reduction in absenteeism of dental patients and simplification of procedures at Prof. Leng Dental Clinic
- Development of new care strategies in the Dental Program
- Application of quality assurance techniques in ad hoc quality assessments of the Program for the Early Detection of Cervical Cancer
- Definition of roles and functions of the members of the dentistry team in the clinics
- Improvement of team interpersonal relations in Rosita Renard Clinic
- Opinion survey on impact and motivation of community work in Rosita Renard Clinic
- Nutritional check-up by the eighth month of pregnancy for primiparous women or women with previous breastfeeding failure in Rosita Renard Clinic

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- Record review in Infant, Maternal, and Adult Programs in Rosita Renard Clinic
 - Improvement of team interpersonal relations among dentistry team members in Rosita Renard Clinic
 - Guidelines developed for internal use of card file of obese patients and for breastfeeding program; appointments scheduled for children at biomedical risk who do not keep well child appointments; and increase in screening of diabetics in San Antonio de las Condes Clinic
 - Improvement in coordination between the dentistry unit and nurse for school dental health check-ups in the lower four grades of School E 239 in San Antonio de las Condes Clinic
 - Redistribution of personnel and offices and improvement in materials and supplies in the Santa Julia Clinic
 - Redistribution of the Maternal Care Office to improve the quality of patient and creation of Pap smear clinic in the Community Center in the Santa Julia Clinic
 - Early referral of children age 0 to 30 months to dental clinic from well child and nutritional check-ups and set-aside of time for immediate care of patients referred to nutrition program in Vitacura Clinic

3. Metropolitan North Health Service

Training: 70 at PHC level
 45 at hospital level
 2 DAP professionals

Organization: 3 Quality Monitors:

Dra. María Eugenia Valle, Dentist, DAP
 Srta. Ana María Riquelme, Nutritionist, DAP
 Sra. Marcela Gómez, Midwife, DAP

Quality Improvement Projects:

- Effect of 26% dilution of milk in Symon Ojeda Clinic
- Insufficient information to pregnant adolescents on their first consultation in the Health Service's PHC Clinic
- Promotion of breastfeeding in Symon Ojeda Clinic

4. Metropolitan South-East Health Service

Training: 92 at PHC level
78 at hospital level
2 DAP professionals

Organization: 1 Quality Committee (Sotero del Río Hospital)
3 Quality Monitors:
Sra. Salomé Sánchez, Sotero del Río Hospital
Sra. Pilar Landaeta, Sotero del Río Hospital
Sra. Yolanda Parada, Sotero del Río Hospital

Quality Improvement Projects:

- User satisfaction survey in all clinics of La Florida Commune
- Improvement of quality of care for hypertensive patients in Bellavista Clinic
- Modified care for chronic patients in Los Quillayes Clinic
- Modified care for infants under six months in Los Quillayes Clinic

Ad hoc Improvements:

- Indicators developed for Adult, Maternal, and Perinatal Programs
- Focus groups in the five clinics in La Florida Commune, which in turn generated several immediate quality improvement measures that were implemented by clinic directors
- Improvement in user access to the Older Adult Sub-Program in order to obtain more thorough diagnoses and develop strategies to improve care in Villa O'Higgins Clinic in La Florida
- Improve patient care in units supervised by the Chief of Nursing in Bellavista Clinic
- Priority for morbidity care for geriatric patients in Los Quillayes Clinic
- Facilitate entry of chronic patients into various sub-programs in Los Quillayes Clinic
- Priority care for infants transferred from other clinics to Los Quillayes Clinic
- Training of auxiliary nurses in management of the central card file and in vaccination work in Bellavista Clinic

5. Metropolitan South Health Service

Training: 61 at PHC level
2 DAP professionals

Organization: Quality Committees at Health Service, Hospital, Clinic and Clinical Service levels

2 Quality Monitors:

Sra. Cecilia Moya, DAP

Sr. Lautaro Fernández, DAP

Quality Improvement Projects:

- Degree of efficiency in gynecological care at PHC level
- Quality of care for acute respiratory infections in PHC clinics
- Quality of information imparted to users given medications
- Application of guidelines for measuring technical and administrative aspects of quality in PHC clinics

Ad hoc Improvements:

- Development of QA plan for entire Health Service

6. Metropolitan Central Health Service

Training: 26 at PHC level
2 DAP professionals

Organization: 1 Quality Monitor

Quality Improvement Projects:

- Deficiencies in information about the treatment of patients with acute respiratory infections in Los Nogales and San José de Chuchunco Clinics
- Inadequate prescription of antibiotics to patients with acute respiratory infections in Maipú Clinic
- Insufficient time allotted to medical consultation for pediatric patients with acute respiratory infections

7. Metropolitan Environmental Health Service

Training: 42 at PHC level

Organization: 1 Quality Committee (Health Service)

Ad hoc Improvements:

■ Development of work plan

F. Region VI: Libertador Bernardo O'Higgins

1. Libertador Bernardo O'Higgins Health Service

Training: 65 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 2 Quality Monitors:
Sra. Lucrecia Villarroel
Sra. Paula Randolph

Quality Improvement Projects:

- Lack of health indicators for incidence of Chagas disease in Peumo Commune
- Lack of health indicators for incidence of Chagas disease in Pichidegua Commune
- Lack of information for indicators of incidence of Chagas disease in Las Cabras Commune
- Lack of information for indicators of incidence of Chagas disease in San Vicente de Tagua-Tagua Commune
- Improvement in the quality of information on newborns under 2,500 grams
- Excessive administrative processing of SOME clients at Clinic No. 5 in Rancagua
- Long waiting time for patients referred to specialists in the Health Service
- Increase in incidence of adolescent pregnancy in San Francisco de Mostazal Commune
- Low coverage of hypertensives and diabetics in Chronic Disease Program in Codegua Clinic
- High incidence of diarrheal disease among infant population in Litueche Commune
- Improvement in intersectorial coordination and communication in Litueche Commune
- Lack of information on user satisfaction with Mobile Unit
- Excessive delay in serving clients at the SOME in Nancagua Hospital

Ad hoc Improvements: Information not available

G. Region VIII: Maule, Concepción-Arauco, Talcahuano

Training: Courses coordinated by regional quality commission for the four Health Services in the region for the following groups of health professionals: nutritionists; midwives; dentists; nurses; social workers; statisticians, pharmacy assistants, educators; and physicians

Organization: 1 Regional Quality Commission with representatives from the 4 Health Services and university faculty

Ad hoc Improvements:

■ Regional diagnosis of quality problems that served as the point of departure for Health Service quality programs

1. Maule Health Service

Training: 45 at PHC level
2 DAP professionals

Organization: 2 Quality Monitors:
Sra. Teresa Verdugo
Sra. Nadia Núñez

Ad hoc Improvements: Information not available

2. Concepción-Arauco Health Service

Training: Participation in regional training courses by PHC personnel from the Health Service
19 senior staff of Health Service
2 courses at hospital level (Coronel Hospital)
2 DAP professionals

Organization: 3 Quality Committees (Health Service; Contulmo Hospital; Coronel Hospital, with 5 sub-committees for Administrative Improvement, Pharmacy, Midwives in Obstetrics Service, Nurses in Medicine Service, and Delegates from the Clinical Services and Support Units)

15 Quality Monitors:

Sra. Pablina Wilder
Sra. Mónica Araos
Sra. Angela Zúñiga
Sra. María Teresa Benavente
Sra. Patricia Landeros
Sra. Luisa Martínez
Dra. María Rebeco
Sra. Haydée Vera
Sra. María Angélica Castro
Sra. María Rosa Tapia
Sra. Alicia Rogozinski
Sra. Julia Ramirez, University School of Nursing
Sr. Juan Manuel Venegas, JUNJI
Sra. Teresa Uriarte, University School of Obstetrics
Dra. Drilia Urra

Quality Improvement Projects:

- Lack of adequate signage in Coronel Hospital
- Long waiting times for mothers in infant check-ups in Coronel Hospital Permanent Clinic
- High number of non-patients in hallways of Maternity Ward in Coronel Hospital
- Inadequate demonstration of PNAC products in La Florida and Santa Juana Hospitals

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- Low coverage of educational programs on adolescent sexuality in high-risk sectors of San Pedro Commune
 - Long waiting times of patients in Tucapel Clinic
 - Deficient human relations of personnel in Costanera Clinic
 - Inadequate demonstration of PNAC products in Clorinda Avello Clinic
 - Preferential treatment of pregnant adolescents in Contulmo Hospital
 - Quality assessment of laboratory services in Tirua Clinic
 - Water supply in San José de Colico, Curanilahue
 - Maladaption of hospitalized children in Coronel Hospital
 - Insufficient number of bathrooms in Permanent Maternity Service in Coronel Hospital
 - Reduction in the waiting list for parasitology laboratory exams in Coronel Hospital

Ad hoc Improvements:

- Transfer and physical reconditioning of dental clinic, including waiting room, in Concepción Regional Hospital
- Reordering of dental patient appointments in the Regional Hospital
- Improvement in the registration of dental patients in the Regional Hospital
- Adequate distribution of procedures and exam rooms in the Regional Hospital
- Change in behavior among midwives and auxiliary personnel with respect to importance of early breastfeeding in the Regional Hospital
- Creation in 1993 of the commission for the evaluation of internal referrals for newly referred psychiatric patients in the Regional Hospital
- Implementation of new hours of service at Tucapel Clinic
- Development of indicators to select cases of children for family assistance in Lorenzo Arenas Clinic
- Preparation of evaluation guidelines for the Program of Children with family assistance in Lorenzo Arenas Clinic
- Technical improvement in dental care in Lorenzo Arenas Clinic
- Specific time appointments on different days given to pregnant patients in Lorenzo Arenas Clinic
- Scheduling of medical hours at regular intervals in Lorenzo Arenas Clinic
- Improvement in the coordination and activities of the Women's Program (midwife-auxiliary) in the Municipal Health Department of Santa Juana

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- Priority given to primary care in Lota Hospital
 - Improvement in the treatment of hospitalized patients in Lota Hospital
 - Development of a special form for dietary indications and hours of service for young children in Clorinda Avello Clinic
 - Control of care for children in Basic School in Santa Juana through registration in notebook
 - Timely delivery of laboratory reports to enable appropriate treatment in Santa Juana Clinic
 - Staged appointment times for chronic patients at Contulmo Hospital to reduce waiting times
 - Introduction of numbered turns for check-ups and nutritional controls in Cañete Hospital
 - Development of display on breastfeeding promotion for patients in puerperium in maternity ward in Cañete Hospital
 - Opinion survey of all patients concerning food service quality in Cañete Hospital
 - Reduction in nosocomial infections in maternity ward in Cañete Hospital
 - Training of Health Monitors in Clinic No. 1 of Lota Alto
 - Improved coordination between hospital and clinics, especially between Maternity and Maternal Polyclinic in Lota Hospital
 - Increased flexibility in Maternal Polyclinic with more personalized care; open door Adolescent Polyclinic, Clinic No. 4, Lota Bajo
 - Elimination of excessive prenatal care registration procedures for pregnant women in Clinic No. 4, Lota Bajo
 - Improved coordination to expedite care of post-partum patients and newborns in Camilo Olavarría Clinic
 - Revised hours of care for maternal patients in Camilo Olavarría Clinic
 - Reordering of activities of SOME in Camilo Olavarría Clinic
 - Referral of pregnant patients to the Dental Service in Camilo Olavarría Clinic
 - Promotion of change in personnel attitudes toward patients in Eleuterio Rodríguez Clinic in Curanilahue
 - Improved relationship between the nutritionist and patients in Eleuterio Rodríguez Clinic
 - Reorganization of the activities of auxiliary-paramedical personnel in Eleuterio Rodríguez Clinic

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- Different hours of service for maternal and obstetrics patients in Yobilo Clinic, Coronel Commune
 - Improvement in the registration of chronic patients in Yobilo Clinic
 - Improved coordination between the clinic and community organizations in Yobilo Clinic
 - Different hours of service for adult and pediatric morbidity in Tirúa Clinic
 - Optimization of daily routine in Tirúa Clinic
 - Reorganization of care in Tirúa Clinic
 - Maintenance of technical quality and procedures in Coronel Hospital
 - Solution to the problem of contamination in the microbiology laboratory in Coronel Hospital
 - Solution to the problem of ambulance transfer in Coronel Hospital
 - Improved care for maternal patients in the Permanent Clinic of Coronel Hospital
 - More rapid processing of discharge orders in the Neonatology Unit of Coronel Hospital
 - Initiation of a system of coordination with municipally run clinics for care of high-risk pregnancies in Coronel Hospital
 - Reorganization of patient visiting hours in Coronel Hospital
 - Improved service to the public by Social Services in Coronel Hospital
 - Improved quality of care in treatment room in Tirúa Clinic
 - Reduction in the loss of laboratory exams in Tirúa Clinic

3. Talcahuano Health Service

Training: Participation in regional training courses by PHC and hospital personnel from the Health Service
2 DAP professionals

Organization: 4 Quality Committees (Health Service, Dental, Las Higueras Hospital, Hualpencillo Clinic)

6 Quality Monitors:

Sra. Yolanda Vergara

Sra. Miriam Pinilla

Sra. Olivia Luengo

Sra. Elena Nuñez

Sra. María Ximena Reyes

Sra. María América Lara

Quality Improvement Project:

- Inadequate referral of dental patients between clinics and Las Higueras Hospital

Ad hoc Improvements:

- Use of identification for public health professionals and equipment in Hualpencillo Clinic
- Review and analysis of the claims book in Hualpencillo Clinic
- Development of administrative and technical norms for newborn care in Maternity Service of Las Higueras Hospital
- Development of norms to enable reduction in percentage of birth certificates prepared after mother is discharged in Las Higueras Hospital
- Opinion survey of clients of Las Higueras Maternal Polyclinic
- Organization of High-Risk Obstetrics Unit in Las Higueras Hospital
- Coordination regarding the flow and referral of patients between Endodontia and Maxillar-Facial Surgery in Las Higueras Hospital
- Application of quality assurance methodology in pilot plans for community house and clinic by social worker in Las Higueras Hospital
- System of supervised visits to patients by SOME chief in Las Higueras Hospital
- Improved register of laboratory exam reports issued to various units of Las Higueras Hospital by the chief of the Clinical Laboratory

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- Reduced waiting time for results of Pap smears in Maternal Clinic of Las Higueras Hospital
 - Improved register of well child check-ups and reduced waiting time for mothers in Hualpencillo Clinic
 - Creation of dental clinic in Hualpencillo Clinic
 - Varied scheduling of gynecology, pregnancy, and post-partum patients and newborns in Hualpencillo Clinic
 - Reorganization of care for pregnant and post-partum patients in San Vicente Clinic
 - Staged appointment times for patients at Penco Clinic
 - Periodic meetings scheduled for different teams in Penco Clinic
 - Implementation of new register of maternity admissions and discharges in Las Higueras Hospital
 - Development of administrative and technical norms for post-partum care in Las Higueras Hospital
 - Training program for pharmacy assistants
 - Client satisfaction survey by midwife supervisor of DAP
 - Maternal appointments with specific times in Penco Clinic
 - Rapid claims in San Vicente Clinic
 - Information office in San Vicente Clinic
 - Varied schedule for medical care in San Vicente Clinic

H. Region IX: Araucanía

1. Araucanía Health Service

Training: 85 at PHC level
55 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 1 Quality Committee (Health Service)

6 Quality Monitors:

Sra. Teresa Astete
Sra. Ingrid Clouet
Sra. Elizabeth Cuevas
Sra. Ligia Sanhueza
Sra. Margarita Guevara
Sra. Alicia Irazoqui

Quality Improvement Projects:

- Foot care for diabetic patients, implemented simultaneously in Traiguén Hospital, Nueva Imperial Hospital, Loncoche Hospital, Lautaro Hospital, Victoria Hospital, Gorbea Hospital, Villarrica Hospital, Miraflores de Temuco Clinic, and Angol Hospital
- Deteriorated human relations among health team members in Carahue Hospital
- Increase by 21% in pregnancies among girls under 21 years of age in Theodoro Schmidt Commune

Ad hoc Improvements:

- Periodic coordination meetings of infant health team in Miraflores Clinic
- Improved vaccination coverage in Miraflores Clinic
- Workshop on breastfeeding and infant feeding to standardize criteria among personnel in Miraflores Clinic
- Varied scheduling of post-partum patients and newborns in Pitrufuquén Clinic
- Improved quality of care for children under six years of age with collaboration of well child check-up team in Traiguén Hospital
- Improved human relations in Maternity Service of Nueva Imperial Hospital
- Prenatal education program for groups of pregnant women in Nuevo Amanecer Clinic

I. Region X: Valdivia, Osorno, Llanchipal

1. Valdivia Health Service

Training: 66 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 2 Quality Committees (San José de la Mariquina Clinic,
Máfil Clinic)

1 Quality Monitor:
Dra. Katy Heise

Quality Improvement Projects:

- Poor compliance of diabetic patients with scheduled controls in Futrono Clinic
- Inadequate use of pharmacological treatment in San José de la Mariquina Clinic
- Improvement in the quality of education in Corral Hospital
- Improvement in self-care at Lanco Hospital
- Training to improve dental care in the Dental Program of the DPP

Ad hoc Improvements:

- Music introduced in the Outpatient Clinic of Valdivia Hospital as part of the “Valdivia Healthy City” Project
- System to review laboratory reports with assigned physician time in Gil de Castro Clinic
- Improvement in the quality of the Responsible Parenthood Program in Gil de Castro Clinic
- Improvement in the quality of care in the Adolescent Program in Gil de Castro Clinic
- Monitoring of the number of bacteriology tests and their results in Las Animas Clinic
- Improvement in the medical records system in Las Animas Clinic
- Use of quality improvement tools in the Participative Community Diagnostic exercise in Las Animas Clinic
- Reconfiguration of the midwife’s schedule to enable her participation in community work in the San José de la Mariquina Clinic
- Reduction in absenteeism of chronic, hypertensive, and diabetic patients in Máfil Clinic
- Priority care to patients with abnormal Pap smears in Máfil Clinic

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- Increase in coverage of new baby visits in Máfil Clinic
 - Responsible parenthood program implemented through home visits by the entire health team in Máfil Clinic
 - Implementation of a box specifically designated for vaccines in Panquipulli Clinic
 - Redistribution of vital statistics services in Panquipulli Clinic
 - Reduction in lag time between requests for and conduct of laboratory tests in Futrono Clinic
 - Establishment of a different schedule of service for chronic patients in Dr. Alfredo Gantz Clinic
 - Specific appointment times for patients with particular pathologies in Dr. Alfredo Gantz Clinic
 - Implementation and financing of an emergency hospital in 1993
 - Redistribution of PHC tasks in maternal visits in Paillaco Hospital
 - Reorganization of the tasks of various professionals in several programs in Río Bueno Hospital
 - Reinforcement of education for the mother after the vaccination of her child in the Vaccination Clinic of Los Lagos Hospital
 - Reorganization of the Surgery Service, especially related to nursing functions, in La Unión Hospital
 - Patient education concerning appropriate use of emergency services in La Unión Hospital
 - Improved interpersonal relations among employees in La Unión Hospital
 - Stimulation of interest in quality in the Local Nursing Sub-committee in Austral University
 - Field test of improved nursing procedures with midwives in the Labor and Delivery Unit
 - Assistance by the DPP nutritionist in improving the quality of warehousing and storage of PNAC products
 - Development of supervision guidelines
 - Introduction of different schedules for Rural and Urban SOME in Futrono Clinic
 - Training of paramedical personnel to provide more adequate orientation to patients about the use of emergency services in Futrono Clinic
 - Improved coordination between Futrono and Los Lagos Clinics with respect to availability of laboratory exams
 - Designation of a professional in charge of the pharmacy, resulting in an increase in stock of medicines in Futrono Clinic

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- Designation of specific days for placing pharmacy and dental orders in Futrono Clinic
 - Reorganization of the dispensing of medicines and assignment of responsibilities to specific persons in Futrono Clinic
 - Updating of the card file of chronic patients in Futrono Clinic
 - Counterreferral of rural chronic patients to the posts that referred them in Futrono Clinic
 - Establishment of specific days of service for each subprogram in the Chronic Disease Program in Futrono Clinic
 - Establishment of Diabetes Day (last Wednesday of each month) for glycemia blood tests with appointments with physician and nurse on different days in Futrono Clinic
 - Creation of a diabetics club in Futrono Clinic
 - Reorganization of the system of rural rounds in Futrono Clinic
 - Development of standards of care for the rounds in Futrono Clinic
 - Care in health posts with complete equipment
 - Structuring of dental services in the posts linked to Futrono Clinic
 - Drug supply in health posts linked to Futrono Clinic
 - Ongoing training of auxiliary personnel in Futrono Clinic
 - Incorporation of the health post auxiliary into each of the programs in Futrono Clinic
 - Standards of care for emergency services in Futrono Clinic
 - Reorganization of the inpatient ward and establishment of a referral system in Futrono Clinic

2. Osorno Health Service

Training: 56 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 2 Quality Monitors:
Dr. Raúl Koch, Chief, DAP
Sra. Karin Mardorf

Ad hoc Improvements:

- Different schedule for electrocardiograms
- Increased flexibility in patient visits in Purranque Hospital
- Priority service for pregnant women (they are served before other patients) in the Municipal Health Department of Puerto Octay
- Quality assessment of programs by DPP

3. Llanchipal Health Service

Training: 56 at PHC and hospital levels (combined)
2 DAP professionals

Organization: 2 Quality Monitors:
Sra. Mireya Nieto
Sra. Juana Ulloa

J. Region XI: Aysen

1. Aysen Health Service

Training: 72 at PHC level
2 DAP professionals

Organization: 1 Quality Committee (Health Service)

1 Quality Monitor:
Enf. Elizabeth Otazo

Quality Improvement Projects:

- High incidence of caries in population under age 15 in Melinka and Repollal
- Increase in ARI morbidity and mortality among infants in marginal urban sectors of Coyhaique
- Late detection of cervical cancer in La Junta
- Late detection of cervical cancer in Melinka
- Late detection of cervical cancer in Villa O'Higgins
- Increase in number of tuberculosis cases in adults in Puerto Guadal
- Increase in leucorrhea among women 15 to 65 years of age in Villa Mañihuales
- Increase in number of cases of high obstetrical risk due to adolescent pregnancy in Coyhaique
- Decrease in breastfeeding among children under six years
- Support to the cardiovascular risk prevention program
- Support to the evaluation and stimulation of psychomotor development in the Urban Clinics of Coyhaique
- Late detection of cervical cancer in the population served by the Alejandro Gutierrez Clinic in Coyhaique
- High absenteeism of chronic patients in the Gabriela Mistral Clinic in Coyhaique

K. Region XII: Magallanes

1. Magallanes Health Service

Training: 20 PHC and hospital professionals and university faculty
(combined)

2 DAP professionals

Organization: 1 Quality Committee (PHC)

3 Quality Monitors:

Sra. María Elena Urbina

Sra. Pamela Franzi

Dr. Juan Santana

Quality Improvement Projects:

- Morning congestion in the Permanent Clinic for Adults in the Regional Hospital
- Absenteeism of patients referred from the Carlos Ibañez MARCHA Clinic to the Speciality Clinic in the Regional Hospital
- Limited training of non-medical personnel in municipal clinics
- Limited counseling and education of hypertensives in 18 de Septiembre Clinic
- Long waiting time for patients referred from Oscar Bonilla Clinic to Pediatrics Speciality Clinic
- Excessive waiting time for adults seeking care at Miraflores Clinic
- High demand for care by pediatric patients with minor complaints in the Padre Hurtado Health Center

Ad hoc Improvements:

- Change in the schedule of service to the public of the SOME in Porvenir Hospital
- Simplification of the handling of medical records in the Permanent Clinic of the Regional Hospital
- Expansion of the schedule for accepting laboratory test samples in the Regional Hospital
- More rapid delivery of laboratory test results in the Regional Hospital
- Improvement in the scheduling of services for adults, with appointments staggered by day and time
- Opinion surveys of mothers in the Padre Hurtado Health Center
- Counseling and distribution of educational flyers to mothers in the Padre Hurtado Health Center